

The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 699.—Vol. XIX.

LONDON, SATURDAY, JANUARY 13, 1849.

[PRICE 6D.]

Greenwich Hospital—Sale of Lead Ore.

THE COMMISSIONERS OF GREENWICH HOSPITAL will receive TENDERS for the PURCHASE of EIGHT HUNDRED and THIRTY-SIX TONS of LEAD ORE, at the LOW BYER INN, ALSTON, up to One o'clock in the afternoon of Wednesday, the 24th day of January, 1849.

Samples of the ore will be forwarded to any parties wishing to purchase, who may not appoint agents to examine them, on application to Mr. Paull, Alston, Cumberland; and conditions of sale may be had on application to Mr. Grey, at the Greenwich Hospital Office, Dilston, Newcastle-on-Tyne.

STEAM-ENGINE AND MINING MATERIALS FOR SALE.

MR. WILLIAM BROWNE has received instructions to SELL, by PUBLIC AUCTION, on Tuesday, the 16th January next, and following day, at Ten o'clock in the forenoon, the whole of the PLANT of MATERIALS and MACHINERY belonging to the GREAT HEWAS MINE, near ST. AUUSTELL, CORNWALL.

Consisting of a 66-inch cylinder STEAM-ENGINE, with two boilers, about 26 tons.

A very good BOILER, about 12 tons, lying on Hallenbeagle Mine, near Blackwater.

A 40-foot WATER-WHEEL, 4 feet breast, oak axle, iron sockets, with 16-head stamps attached, iron lifters, &c.

A 22-foot ditto, 5 feet 9 inch breast, ditto ditto, 8-head stamps attached, wood lifters.

A 18-foot ditto, 22 inch breast, ditto ditto, 6-head stamps attached, wood lifters.

A 12-foot ditto, 3 feet 9 inch breast, ditto ditto, 4-head stamps attached, ditto.

10 9 ft. 30 in., 14 ft. 12 in., 29 ft. 11 in., and 6 ft. 9 in. pumps; 4 matching pieces; 1 12 ft. 30 in., 1 12 ft. 8 1/2 in., 1 9 ft. 13 in., and 1 9 ft. 8 in. working barrel; 1 6 ft. 13 in. door-piece; 2 6 ft. 20 in. double door-pieces; and 2 6 ft. 8 in. double door-pieces; 2 8 ft. 20 in., 1 9 ft. 13 in., 1 9 ft. 9 in., and 1 5 ft. 9 in. wind-bore; 3 branch pipes; 73 nos. of 1 1/2 in. main rods, with rod-plates, pins, &c.; 1 bucket-rod and plates; 5 horse-whims, shaft tackle, and kibbles, complete; large capstan and shears; 1 balance-bob; 180 fms. 10-in. capstan rope; 300 fms. 5 1/2 inch and 1 1/2 in. 5-in. whip-rope; 700 fms. tackle and other ropes; 42-in., 40-in., and 34-in. smiths' bellows; 3 anvils, 2 vices, smiths' and miners' tools, new and old iron, double crab winch, screwing stocks, taps and plates, 150 fms. 4-ft. ladders, ladders, racks, trunks, chests, barrows, a large quantity of excellent timber, &c.; together with all the counting house furniture, and all the halvans on the mine.

The above materials, which have been placed on the mine within the last two years, have been carefully selected, and are, in general, quite equal to new. An early attendance is requested, as the whole must be sold in two days.

Any information may be obtained of Richard Pearce, Esq., Pensance; Capt. Trevena, on the mine; or of Mr. William Brown, auctioneer and appraiser, Charlton, St. Austell.—Dated December 26, 1848.

COLLIERY PLANT, PEMBROKESHIRE.—TO BE SOLD BY AUCTION, on Wednesday, the 17th day of January, 1849, at the BROAD-MOOR COLLIERY, near BEGEGLY, a 40-inch DOUBLE ACTING CONDENSING ENGINE, with TWO BOILERS (in excellent condition); iron and wooden railway waggon, pumps, pump-rods, chains, horse gin, and all the other materials usually required for carrying on an extensive colliery.

For further particulars apply to Mr. Lewis Wilson, land agent, Cresswell, near Pembroke; or to Mr. James Wilson, mineral agent and surveyor, Haverfordwest.

A FREEHOLD ESTATE, in the county of BRECON, containing 200 acres of Arable and Wood Land, rich Veins of Iron Mine, Fire Clay, &c.

MR. M. WHITTINGTON has been instructed to OFFER FOR SALE, BY AUCTION, at the CASTLE HOTEL, NEATH, on Thursday, February 1, 1849, between Two and Three o'clock in the afternoon, subject to such conditions as shall then be produced, in Two Lots.

LOT I.—All that valuable FREEHOLD FARM AND LANDS called CEFN-TROSGOOD, situate in the parish of Ystradgvalle, in the county of Brecon, and containing, by estimation, 300 acres of arable and wood land; a substantial built dwelling-house, with all necessary out-buildings; also, all the IRONSTONE and other MINERALS contained on the property. There is a right of common on the Great Forest of Brecon, for depasturing 200 sheep, 14 ponies, and 26 head of cattle, at the moderate sum of 15d. per annum.

LOT II.—All those rich VEINS of BLUE and YELLOW FIRE-CLAY, situate under Lot I., and known as the celebrated Dynas Fire-Clay, now in the occupation of Mr. Chas. Roger Harris, under a lease for 60 years, 8 of which have expired, at the sleeping rent of £100 per annum, or 18d. per ton royalty. There is a tramroad from the works to the Neath Canal Navigation. The property is delightfully situated in the upper part of the Vale of Neath, within 14 miles of Brecon, 14 miles of the Neath, 14 miles of the Neath Canal Navigation, 1 from the Vale of Neath Railway, and midway between Brecon, Neath, and Merthyr.

Further particulars may be had on application to Mr. John Thomas, postmaster, Glyn-Neath, who will get the property shown to parties wishing; or to the auctioneer, Post-office, Neath.

MALLEABLE IRON-WORKS AND PROPERTY FOR SALE, BY PRIVATE BARGAIN.

MALLEABLE IRON-WORKS.—These large WORKS, belonging to the WEST OF SCOTLAND MALLEABLE IRON COMPANY, situated at MOTHERWELL, in the parish of DALZIELL and county of LANARK, consisting of REFINERY FIRES, FORGE, RAIL, ROLLING, SLITTING, HOOP, PLATE, and SHEET MILLS, and, with a little further outlay, capable of producing about 600 tons of finished iron weekly.

These works, which have been erected on the most approved plan, have been in operation since May 1847; and, besides rails, can be made to turn out all the sizes and varieties of iron usually required by the trade.

There are on the ground 1 blowing engine of about 60-horse power, for refineries, 3 forge and 2 mill engines, condensing and that work expansively, each about 100-horse power. Between the mill engines there is a small subsidiary high-pressure engine, of about 40-horse power, for driving the guide mills. There are likewise one lathe and one pumping high-pressure engine, each about 20-horse power. All these engines, with one exception, are in first-rate working order.

Attached to the works are smiths', wrights', and fitting-up shops, with turning lathes, cranes, &c., complete. Also, offices, stables, stores, mill manager's house, and 99 workmen's houses, besides ample accommodation in the village of Motherwell immediately adjoining.

These works are most favourably situated, being surrounded by coal and pig-iron works; and, as the Caledonian Railway forms one of the boundaries of the works, railway communication to all parts of the kingdom is afforded; and, besides the existing accommodation, a direct communication with the Harbour of Glasgow, distant 10 miles, will be had on the opening of the Clydesdale Junction Railway, which is now nearly completed.

ESTATES OF BRAIDHURST AND MILTON.

These ESTATES consist of 350 acres or thereby, on which there is an excellent farm standing, with out-houses and cottages sufficient for a large farming establishment. The grounds having been for some years in the hands of the proprietors, are in the best condition.

The lands contain minerals. The coal has been wrought at a moderate depth, for the last 12 months, for the supply of the works, and has been proved to be of excellent quality. The upper seam of coal, 4 feet thick, has been found by borings in several parts of the lands, and is of equal quality; and there is no doubt that all the usual seams of the district run through the property.

The Fen duties exigible from the buildings on the lands, including the village of Motherwell, which amount to about £300 per annum, will be sold with the lands.

These lands, with the minerals and Fen duties, will be sold either apart from, or along with the works.

For further particulars, application may be made to Mr. Lawrence Hill, jun., at the works, at Motherwell; Mr. James Anderson, at the company's office, 88, St. Vincent-street; or Messrs. Moncrieff, Peterson, and Forbes, 45, West George-street, Glasgow, in whose hands are the title deeds of the property.

Glasgow, January 2, 1849.

EXTENSIVE AND VALUABLE MINERAL PROPERTY AND IRON-WORKS FOR SALE.—TO BE SOLD, BY PRIVATE CONTRACT, THE VENALL COAL AND IRON-WORKS.

Situate on the south side of the RIVER NEATH, GLAMORGANSHIRE, about 8 miles from the port of Neath, and 14 from the port of Swansea, with all the necessary appendages for carrying on the smelting of iron, and an extensive shipping trade of stone coal and stone culm.

The property comprises long leases of coal and ironstone, extending over about 3000 acres of land, in a ring fence, which are taken on favourable terms. The coal is anthracite, and three veins, of an aggregate thickness of about 25 feet, are effectually opened by level, for the supply of 100 to 200 tons per day.

The ironstone veins are abundant and rich, and sufficiently opened by level to yield an ample supply for three furnaces. There is also valuable black-band, extending over a large acreage.

The works consist of an engine-house for a pair of engines, one 50-horse high-pressure blowing engine, two blast-furnaces, with all the necessary hot-blast stores, castings, foundry, finery, &c.

The works and colliery are in operation, and any person who may be desirous of purchasing, will be treated with on liberal terms.

Reports recently made on the property, by Messrs. John Southern, of Bilston, and W. F. Struve, of Swansea, may be seen on application to Messrs. Jevons and Wood, Neath; Messrs. Llewellyn and Randall, solicitors, Neath; or to Messrs. Rowland, Hacon, and Rowland, solicitors, 38, Threadneedle-street, London.

COAL.—TO BE SOLD, OR LET, A VALUABLE COAL MINE.

The property of Sir Thomas G. Hemketh, Bart., situate about five miles from the important manufacturing town of BLACKBURN, in the township of Great Harwood, in the county of Lancashire. The mine has been recently proved, and found, at 77 yards from the surface, to be 6 feet in thickness, and of excellent quality. It is commonly called, or known by the name of, the UPPER MOUNTAIN MINE, and extends over about 1000 statute acres, which may be divided into suitable lots.

A section of the bottom may be seen by applying to Mr. Boodle, Rufford Hall, Ormskirk; or to Mr. Whittle, coal viewer, Charnock Richard, Chorley—to either of whom proposals may be sent.

TO BE SOLD, OR LET ON ROYALTY, the DARLSTON GREEN COLLIERY AND IRONSTONE MINES.

In the district of SOUTH STAFFORDSHIRE, now working by the "Galvanised Iron Company."

These MINES comprise about 26 acres, held under lease, of which about 23 years are unexpired. They contain all the measures of IRONSTONE usually found in that locality—the excellence of the quality of which is well known, and a small portion of the New Mine Coal, the greater portion of which has been worked. The mines have recently been opened, and drained at a considerable expense, and are now in complete working order. There are a sufficient number of shafts sunk on the estate to get the whole of the mines; and a very trifling outlay will open the measures of ironstone which are not now at work.

The PUMPING and WINDING-ENGINES are perfectly EFFECTIVE, and all the PLANT in EXCELLENT REPAIR. The Birmingham Canal runs into the estate, and there is abundant demand for the produce of these mines at the surrounding iron-works.

For further particulars, apply at the office of the Galvanised Iron Company, 3, Mansion-house-place, London; or to Mr. Taylor, King Hill-field, Darlston.

TO BE SOLD, OR LET ON LEASE (FREEHOLD), the PHENIX IRON-WORKS, WEST BROMWICH.

In the district of SOUTH STAFFORDSHIRE, at present carried on by the "Galvanised Iron Company."

These WORKS, which are amongst the most eligible and complete in the district, comprise the following MILLS and FORGES—viz.:

1. An ENGINE, of 100-horse power, by Boulton and Watt, in brick engine-house, with two 35-foot boilers, and all the requisite machinery, of the best description, recently erected, driving a forge; a 20-inch WHEEL-PLATE TRAIN, and a RAIL MILL—appended to which is a small ENGINE, of 10-horse power, with two PUNCHING and STRAIGHTENING MACHINES for RAILS—complete.
2. An ENGINE, of 60-horse power, by J. and G. Davis, in brick engine-house, with three 35-foot boilers, with powerful machinery, driving a forge; an 18-inch BOILER-PLATE and SHEET MILL; and a 16-inch TRAIN, for the manufacture of Bars, T. Iron, and Angle Iron. Attached to this work, is an ENGINE, of 20-horse power, on cast-iron frame, driving a small 8-inch MERCHANT TRAIN, SAW, and TURNING-LATHE.

With these Mills and Forges are 24 PUDDLING and HEATING FURNACES—the whole standing on about two acres of freehold land, bounded by the main road on one side, and by the Birmingham Canal on the other, on which are the necessary wharves for the use of the works.

The capacity of the works is equal to about 350 to 400 tons of finished iron weekly. Adjoining the works, on a separate tenure, are a MANAGER'S HOUSE, with about FIVE ACRES of LAND, and FOUR WORKMEN'S HOUSES.

There is an extensive assortment of ROLLS, for the manufacture of the various descriptions of iron for which these works have been long known, and for which there is an extensive and established connection—the whole forming a most complete and valuable establishment for the supply of manufactured iron in all its branches.

For further particulars, apply either at the offices of the Galvanised Iron Company, 3, Mansion-house-place, London; or to Mr. Spencer, on the premises.

COMBINED VAPOUR ENGINE.—This invention is applied

either to a single engine, with two cylinders and pistons, or, as is usual for marine purposes, two distinct engines with cylinder and piston each. One of the pistons is acted upon by steam, and the other by the vapour of Ferrieholite, or of any other easily vaporized liquid. The steam is generated and applied as in the ordinary engine; but, upon its escape from the first cylinder, after having exerted its expansive force therein, it passes into a case, termed a vaporizer, containing a number of small tubes charged with Ferrieholite, or some easily vaporized liquid, penetrates into the space between, and thus comes into contact with the entire surface of the tubes. Immediately upon the steam coming in contact with the surface of the tubes so charged, a large portion of its caloric is absorbed by the liquid, which is thereby vaporized; and the steam, being deprived of its caloric, becomes immediately condensed, and is then returned into the steam-boiler, or, being by this process perfectly distilled, may be applied for culinary or any other purposes for which pure water is required. The vapour obtained, by the action of the steam upon the liquid in the tubes, is conducted into the second cylinder; and, after exerting its elastic force (which is greater than that of steam) upon the piston, is condensed, and, by means of a force-pump, returned into the vaporizer, which it thus keeps regularly supplied, and is alternately vaporized and condensed.

Cards of admission, to view the working of the engine, may be obtained by application to Mr. B. Talbot, at 47, Bedford-row, between the hours of Twelve and Three o'clock.

CWMBRAIN PATENT IRON REFINERY.—The PROPRIETORS OF IRON FORGES AND MILLS are respectfully INVITED to MAKE TRIAL OF MR. BLEWITT'S REFINED IRON, OR METAL, PREPARED by a NEW PATENT PROCESS.

whereby the IRON is completely FREED from the IMPURITIES CONTRACTED in the BLAST-FURNACE, and, by judicious mixtures, rendered applicable to every kind of manufacture. Heretofore, the metal usually sold in the market has been produced from the worst pigs, scraps, and refuse of some particular blast-furnace, or set of furnaces, without any mixture, or any regard to quality, or the purpose for which it might be required. The PATENT METAL is PREPARED ON SYSTEM, and TO ORDER, for any of the following purposes—viz.:

1. For BOILER and TANK-PLATES.
2. For TIN-PLATES, commonly called COKE-PLATES.
3. For STRONG CABLE BOLTS, RIVET, and ANGLE IRON.
4. This COMPOUND PUDDLED, heated under the hammer into a bloom, reheated, and rolled into a 6 or 6 1/2-inch bar, makes TOPS and BOTTOMS for FLANCH and OTHER RAILS, of very superior quality, and attended with less waste than any other kind of iron used for that purpose. It is also well adapted for nail-roads, horse-shoes, and for other ordinary uses of the blacksmith.

The PATENT METAL is marked with a squirrel, and the initials "R. J. B.," and is to be had only at the "Cwmbrain Iron-Works," near Newport, Monmouthshire.

FOURDRINIER'S PATENT SAFETY APPARATUS, for PREVENTING ACCIDENTS IN MINES AND OTHER PLACES, WHEN THE ROPE OR CHAIN BREAKS.

By the ADOPTION of this INVENTION the LIVES of the WORKING MINERS may be PRESERVED, and the PROPERTY of the MINE OWNERS PROTECTED from the serious consequences of either of the following accidents—viz.:

1. From the men, or the load, being precipitated to the bottom of the shaft when the rope or chain breaks: In this case the apparatus is self-acting.
2. From either the men, or load, being drawn over the pulley: In this case, also, the apparatus is self-acting.
3. From the fearful consequences to men or load of a "whirl," or run: In this case the result is equally certain.

A COAL PIT, with the SAFETY APPARATUS ATTACHED to the CAGE, is daily at WORK near BURSLEM, in the STAFFORDSHIRE POTTERIES.

To inspect the apparatus, or to obtain any further information, application may be made to Mr. Edward N. Fourdrinier (the inventor), Cheddleton, near Leek, Staffordshire; or to Mr. Joseph Fourdrinier, 9, College-place, Camden Town, London—who are prepared to GRANT LICENSES for the USE of the PATENT.

CAMERON'S COALBROOK STEAM COAL & SWANSEA AND LOUGH RAILWAY COMPANY.

An ADJOURNED EXTRAORDINARY GENERAL MEETING of the shareholders of this company will be HELD in the company's offices here, on Wednesday, the 17th of January inst., at One o'clock in the afternoon precisely, for the purpose of considering the Letter of Mr. W. B. J. P. Cameron to the directors, dated the 27th December last—a copy of which has been sent to every shareholder—and of passing such resolution or resolutions thereon as the said meeting shall determine.

By order of the board of directors, A. C. HOWDEN, Sec.

Company's Office, 2, Moorgate-street, London, Jan. 10, 1849.

CALLINGTON MINES COMPANY, London, January 3, 1849.

At a Quarterly General Meeting of the shareholders in this company, held this day, RICHARD HODGSON, Esq., in the chair.

The following resolutions were passed—

Resolved.—That the report and accounts, now read, be received, adopted, and entered in the company's cost and transfer book.—Carried unanimously.

Resolved.—That the best thanks of the shareholders be presented to the chairman and directors for their energetic and able management of this company's property.—Carried unanimously.

GADAIR MINING COMPANY.—At a Special General Meeting of the adventurers, held, pursuant to notice, at the offices, No. 25, Fleet-street, London, on Thursday, the 11th day of January, 1849.

JAMES TRUSCOTT, Esq., in the chair.

The notice convening the meeting having been read,—

The Honorary Purser stated, that he was prepared to submit a proposal on the part of Mr. Mackillop, drawn up in accordance with the terms arranged at the previous meeting—whereupon the chairman having suggested that several influential shareholders resident in Manchester had expressed their desire that the meeting should be adjourned for 14 days, it was

Resolved unanimously.—That the meeting do stand adjourned until Thursday, the 25th inst., to meet at the offices of the company, at the hour of Three precisely.

26, Fleet-street, Jan. 12, 1849. HENRY ENGLISH, Hon. Purser.

RUNNABOARD COOMBE MINE.—An excellent opportunity

is now OFFERED to any person wishing to PURCHASE SHARES in the above valuable concern.—MR. BROUGHTON has FOR SALE A FEW SHARES, very cheap.

Apply to Mr. Broughton, 30, Taylor's-buildings, Woolwich.

TO MINE OWNERS, AGENTS, AND OTHERS.—GENTLEMEN of influence and connection are required to act as AGENTS for CORNWALL, DEVON, and WALES, and for the PRINCIPAL TOWNS in the MINING DISTRICTS of the United Kingdom.—Address "Miner," care of Editor of the Mining Journal, 26, Fleet-street, London.

WANTED.—by the PEMBROKESHIRE IRON AND COAL COMPANY.—TWO STEAM-ENGINES; one 35-inch CONDENSING ENGINE, with a 70-inch blowing cylinder, 7-foot stroke—to have equilibrium conical nozzles and expansive valves, with gear complete to be worked by an eccentric from the fly-wheel shaft—fly-wheel, shaft, carriage, and connecting-rod, steam and feed pipes, with gearing for boilers complete, with and without boilers.—THREE BOILERS required, 30 ft. long, 6 feet shell, 3 feet tube, the same length; the whole to be 7-16th of an inch thick, B.B. plates—to be delivered on board ship, or at the company's works, near Sanderaford, completely fitted for erection.—Also ONE 18-horse power WINDING-ENGINE (condensing), with and without boilers.

Address to Thomas Hay, Esq., Cobourg Hotel, Tenby, South Wales.

WANTED.—A SITUATION AS COLLIERY VIEWER, or MANAGER, by a Gentleman, who is thoroughly conversant with the duties of the situation, and who has had 10 years' experience in the Midland Counties, Lancashire, Yorkshire, Northumberland, and Durham Coal Districts.—Address "X. Y. Z.," care of Messrs. Brown and Standfast, General News and Advertising Agents, 4, Little George-street, Westminster Abbey.

WANTED.—AGENT TO A SMELTING-WORKS.

A YOUNG MAN, of respectable connections, who has had several years experience in the management of lead and silver works, and whose testimonials as to abilities and character are of the first class, and who can give the very best references, wishes to procure a SITUATION AS ABOVE. The advertiser had under his management reverberatory and blast-furnaces, crystallising pots, refining furnaces, rolling and pipe mills, shot tower, &c., in the management of which he acquitted himself with credit. His experience in the conversion of slag lead proved highly successful. Private affairs caused his resignation of his place some time since. Any party engaging him would find him to have a thorough knowledge of his business and book-keeping, and to pay strict attention to the concerns under his care.

Letters (pre-paid, stating terms, &c.) addressed to "A. Z." (lead manufacturer), care of the Editor of the Mining Journal, No. 26, Fleet-street, London, will meet with prompt attention.—January 8, 1849.

TO IRON AND COALMASTERS.—A GENTLEMAN, who has had the management of three or four extensive iron concerns successively, and realised considerable profits in each for the proprietors, is now OPEN to an ENGAGEMENT AS MANAGER, or MANAGING PARTNER, for three years, or longer, if required.—Any respectable party, wishing any further information, will be kind enough to address "O. P.," at the Post-office, Liverpool, till called for.

TO ENGINEERS, MILLWRIGHTS, IRONFOUNDERS, &c.—WANTED A SITUATION, by a Young Man, aged 28, who was brought up as an ENGINEER and MILLWRIGHT, in a first-rate establishment; has had considerable experience in making working drawings, and five years' practice as manager of a respectable concern in Manchester.—Address "F. H. F.," Post-office, Manchester.

TO IRONMASTERS AND OTHERS.—ON SALE, A PAIR of strong BOILER-PLATE SHEARS, with frame work, all complete, in excellent condition—price Ten Guineas. Likewise, a large WOOD WATER TANK, and an IRON ONE, both suitable for a reservoir for a small steam-engine.—Apply at J. P. Foster's Metal Works, Holt-street, Birmingham.

STEAM HAMMER AND BOILER WANTED.—A NEW or SECOND-HAND STEAM HAMMER (Nasmyth's), from 35 cwts. to 3 tons weight; also, a SECOND-HAND HORSE-POWER STEAM-BOILER, for same. State size of boiler and price of each, addressed to "R. M.," office of the Mining Journal, 26, Fleet-street, London.

STEAM-ENGINE FOR SALE.—TO BE SOLD, A 12-horse power HIGH-PRESSURE STEAM-ENGINE, with or without boiler, quite new.

Also, a CORNISH BOILER, between 8 and 9 tons, quite new.

A WATER-WHEEL, 36-feet diameter, 4-feet breast, with wrought axle, cast-iron sockets, plunger blocks and braces, nearly new.

Also, other SECOND-HAND MINING MATERIALS.

Apply to J. E. MARE, Plymouth Foundry.

MINING OFFICES, THREE KING'S COURT, LOMBARD STREET, LONDON.—Messrs R. TREDINNICK & CO. beg to draw the attention of capitalists to the DEPRESSED MARKET VALUE of SHARES in ENGLISH and FOREIGN MINES, many of which pay dividends of from 20 to 30 per cent. per annum, whilst those on the eve of so doing are selling at corresponding low prices.—Messrs T. & Co. continue to DEAL in every description of MINING, RAILWAY, BANKING, INSURANCE, CANAL, and OTHER SHARES.—Statistical information afforded gratuitously, upon personal application.—MONEY ADVANCED upon the above securities.

MINING OFFICES, No. 8, GEORGE-YARD, LOMBARD STREET, LONDON.—MR. RICHARD THOMAS (who has had 20 years' experience as a mining agent in London) OFFERS his SERVICES in the PURCHASE and SALE of MINE and OTHER SHARES, on commission. Purchases in many valuable mines may now be made at unprecedentedly low prices. The fullest information given (without charge) relative to mining investments and operations.

N.B.—R. T. has now ON SALE a limited number of SHARES in an undertaking offering unusual advantages, situated in one of the best mining districts in Cornwall. Full particulars will be furnished on application.

MR. THOS. P. THOMAS, MINING AGENT, AND DEALER IN RAILWAY, GAS, BANK, INSURANCE, AND OTHER SHARES.

3, GEORGE-YARD, LOMBARD-STREET, LONDON.

T. P. THOMAS is a SELLER of SHARES in the leading MINES of Cornwall, Devon, and Wales—paying from 10 to 30 per cent.—Statistical information afforded upon personal application, or by letter.

MR. C. S. RICHARDSON, CIVIL ENGINEER, LAND AND MINING SURVEYOR

5, WHITEFRIARS-STREET, LONDON.

WILLIAM JOHNSON, LAND AND COLLIERY SURVEYOR,

14, CHAPEL-TERRACE, ST. HELENS, LANCASHIRE.

JAMES LANE, MINING SHARE DEALER,

80, OLD BROAD-STREET, LONDON.

MONEY.—MESSRS. KILLICK & CO. (late WINSTANLEY, KILLICK & CO.), SHAREBROKERS, inform their friends and the public, they make IMMEDIATE ADVANCES, to any amount, on the deposit of English and Foreign Railway Shares, Scrip, and Debentures, upon exceedingly advantageous terms. Also BUY and SELL every description of STOCK and MINING SHARES, at much less commission than usually charged.—6, Bank Chambers, opposite Bank of England.

ANGLO-MEXICAN MINT OFFICE, 5, Broad-street-buildings, Jan. 11, 1849.—The directors of the ANGLO-MEXICAN MINT COMPANY beg leave to notify to the shareholders, that a DIVIDEND will be PAYABLE at the office of the company, on and after Monday, the 15th inst. Claims to be made (printed forms of which may be obtained at the office) two clear days previous to payment.—Attendance from Eleven to Three.

G. B. LONSDALE, Secretary.

BEDFORD UNITED MINES.—DECLARATION OF

DIVIDEND.—Notice is hereby given, that a DIVIDEND of FIVE SHILLINGS per share on the shares of these mines, will be PAYABLE at this office on Friday, the 23d December inst., and every succeeding Friday, between the hours of Eleven and Three o'clock, to such shareholders as shall give notice to the secretary personally, or by letter, of their intended application, two clear days before either of the above-named days of payment.

By order of the meeting of shareholders, held this day, 50, Threadneedle-street, Dec. 14, 1848. G. KIECKHOFFER, Secretary.

CONSOLIDATED COPPER MINES OF COBRE

ASSOCIATION.—Notice is hereby given, that a HALF-YEARLY GENERAL MEETING of the proprietors of this association will be HELD, in conformity with the Deed of Settlement, at the office of the company, No. 26, Austinfriars, on Tuesday, January 23d instant, at One o'clock precisely. On that day, two directors—viz. George Frobyn and Robert Passenger, Esqrs., and one auditor, Francis Mills, Esq., will go out of office by rotation, but are immediately re-eligible, and are candidates for re-election. It is necessary that parties intending to offer themselves as candidates for the direction and auditorship should leave notice of such their intention with the secretary, at the office of the company, No. 26, Austinfriars, at least 14 clear days before the day of election.

By order of the court of directors, W. LECKIE, Sec.

26, Austinfriars, January 3, 1849.

HOLYFORD COPPER MINING ASSOCIATION.—The HALF-YEARLY GENERAL MEETING of shareholders of this association will be HELD at the office, 34, Great Winchester-street, on Monday, the 29th January inst., at Twelve o'clock, for the election of directors, in place of Edward Hunt, Frederick Le Mesurier, and Charles Hunt; and auditors, in place of Arthur Hunt and Wm. Brock, whose term of office then expires, and for the ordinary business of the association.

London, Jan. 13, 1849. J. W. BUCKLAND, Jun., Secretary.

Sold by Kent and Richards, 52, Paternoster-row; Hannay, 63, Oxford-street; Starie, Rotherhithe-street, Haymarket; Mansell, 115, Fleet-street; Gordon, 146, Leadenhall-street; free by post, for 42 stamps, from the author's residence, who may be consulted personally (or by letter) on these disorders daily, from 10 till 3, and from 5 till 8.

For many months' action a residue is obtained, which contains carbon in three different states. One part is composed of leaflets or scales, possessed of a very decided metallic lustre, not soluble in acids or alkalies, not obedient to the magnet and burning at a red heat, without the slightest residue; this body is gra-

the Status of the Jews in England, from the time of the Normans to the Reign of her Majesty Queen Victoria, impartially considered: comprising Authentic Notices deduced from Historical and Legal Records; and including a Synopsis, with Comments, of the Debates on the Jewish Disabilities Bill. By CHASLES EGAN, Esq. Barrister-at-Law. London: R. Hastings, Carey &c.

This is an interesting work on the history of the Jews in England, from their first settlement here, in the reign of William the Conqueror, to their complete annihilation, in that of Edward I., about 1290; and after a lapse of four centuries, again from shortly after the death of Charles I. to the present time. It appears they were permitted legally to reside in England during the protectorate of Cromwell, and have since continued; and, in 1670, of such importance were they considered that, on the appointment of a committee of the House of Commons for the purpose of bringing in a bill to prevent the

growth of Popery, they were directed also to inquire into the number of Jews settled in the kingdom, the number of Jewish synagogues established, and the terms upon which they were then located in England. The author then follows up their history through the reigns of James II., William III., Anne, &c., to the present, showing the several stringent measures which have from time to time been taken respecting them, and the gradual relaxation of the laws in their behalf in modern and enlightened times, with full reports of the proceedings in both Houses of Parliament, on the recent proposals for a removal of all constitutional disabilities; lists of the minorities, majorities, &c. We recommend this little work as a complete synopsis of general Jewish history in England, and as being highly amusing and instructive.

The Law relative to Benefit Building Societies; with Notes and Comments. By CHARLES EGAN, Esq., barrister-at-law. London: R. Hastings, Carey street.

This little treatise should be in the hands of all persons who have joined a species of society, sprung up of much importance of late years—viz.: those for securing to the members a freehold or leasehold dwelling-house, by the payment of monthly instalments. It contains full abstracts of the 6th and 7th William IV., c. 35, being the Act of Parliament specially passed for the regulation of these societies, as also of the several Acts for the regulation of other benefit societies, many of the clauses of which bear upon benefit building societies. It also contains full commentaries on the intention and bearing of various sentences and clauses, the importance of proceeding legally in every undertaking, and of appointing a responsible solicitor, by the author. The officials of every such society should have this little work on the table before them.

Transactions of Scientific Bodies.

MEETINGS DURING THE ENSUING WEEK.

THIS DAY.....	Westminster Medical—17, Saville-row.....	8 P.M.
MONDAY.....	Statistical—12, St. James's-square.....	8 P.M.
	Chemical—Society of Arts, Adelphi.....	8 P.M.
	Medical—Bolt-court, Fleet-street.....	8 P.M.
	Pathological—21, Regent-street, Waterloo-place.....	8 P.M.
TUESDAY.....	Linnean—Soho-square.....	8 P.M.
	Horticultural—21, Regent-street.....	8 P.M.
	Civil Engineers—25, Great George-street.....	8 P.M.
WEDNESDAY.....	Society of Arts—Adelphi.....	8 P.M.
	Geological—Somerset-house.....	8 P.M.
THURSDAY.....	Royal—Somerset-house.....	8 P.M.
	Antiquaries—Somerset-house.....	8 P.M.
FRIDAY.....	Royal Institution—Albemarle-street.....	8 P.M.
SATURDAY.....	Asiatic—6, New Burlington-street.....	2 P.M.
	Royal Botanic—Inner Circle, Regent's Park.....	3 P.M.

GEOLOGICAL SOCIETY.

JAN. 3.—SIR H. DE LA BECHE (President) in the chair.

A paper "On the Fluvio-Marine Beds of Hampshire," by J. C. Moore, Esq., was read. Mr. Moore has succeeded in tracing the fluvio-marine beds of Hordwell Cliff and the Isle of Wight as far east as Beaulieu, in the New Forest. They consist of yellowish sands overlying purplish clays, and contain various characteristic fossils.

"Further Observations on the Geology of Ridgway, near Weymouth," by C. H. Weston, Esq.—The author, having examined several sections of the Western strata between Hastings and Lulworth, found the Hastings sand to be represented by a mass of variegated clays, loams, and sands, similar to those he had formerly described in the Ridgway section under that name. In these localities they also contain no fossils; and he thus considers his former views of the sequence of the strata in that interesting locality as fully confirmed.

"On a Siliceous Zoophyte, *Aleponites parasiticum*," by J. S. Bowerbank, Esq.—In a small bed of agate, from an unknown locality, the author observed what he considered the siliceous body of a zoophyte, resembling the *Aleponites* of our own coast. The mammillated surface of the polypoid several smooth cylindrical tubular project in various directions. From these appearances he conceives that the animal had died quietly, and then been rapidly enveloped in the siliceous matter. To explain the vast quantities of silica which enters into the composition of fossils, Mr. Bowerbank states that there is no occasion to have recourse to thermal springs, or extreme heat and pressure, as is often done; since the amount of this earth set free during the decomposition of various rocks and minerals, and carried by rivers into the sea, is fully sufficient for the purpose. The numerous siliceous infusoria found, both recent and fossil, in various formations, prove the abundance of this substance dissolved in the waters of the ocean. This silica in solution appears to have a strong affinity for animal and vegetable matter, and soon collects round and preserves any organic body exposed to its influence.

INSTITUTION OF CIVIL ENGINEERS.

JANUARY 9.—JOSHUA FIELD, Esq. (President), in the chair.

The first meeting of the season is generally devoted to routine business, prefatory of the annual general meeting, which immediately succeeds it, and will be held on Tuesday, January 16, when the ballot for the election of the president and council will take place.

The paper read was "A Description of the Improved Forms of Water-Wheels," by Mr. William Fairbairn, M. Inst. C.E. After noticing the opportunity for improvement afforded by the substitution of cast and wrought-iron for timber, in the construction of hydraulic machines, the author pointed out the disadvantages and loss of power attending the principle and the form of the old water-wheels. He quoted Dr. Robinson's *Mechanical Philosophy*, for the numerous disadvantages of the old form of bucket, and the difficulties arising from the attempts of the old millwrights to design a shape which should retain the water for a greater length of time in it, and thus give out more power. The chief difficulty was the opposition of the air to the entrance of the water; and numerous contrivances, such as boring holes in the staves, making the spout much narrower than the face of the bucket, &c. were tried; but still the difficulties existed, and induced Mr. Fairbairn to adopt the construction described in the paper, and which he termed "The Ventilating Water-Wheel." The general object of these modifications was to prevent the condensation of the air, and to permit its escape during the filling of the bucket with water, as also its readmission during the discharge of the water into the lower mill-race.

The paper then described minutely the principles and the construction of the large wheels erected for the Cairne and Donnan Works; for Mr. Brown, of Linwood, near Paisley; for Mr. Duckworth, of Handforth; for Mr. Ainsworth, of Cleator; and for others; and showed that, in all cases, the system had proved eminently successful. These wheels were all on the suspension principle, with wrought-iron arms, radiating from cast-iron centres to the periphery, and so placed that the whole structure was in tension, the motion being communicated from internal toothed wheels, fixed to the shrouding. The various modifications of the forms best adapted for different heights of fall were described; but it will suffice to give that for breast-works, as it appeared the most complete. These wheels were described to possess many advantages beyond the ordinary shot, the undershot, or the common breast wheels, and were best adapted for falls not exceeding 18 or 20 feet, and where at times there was a considerable depth of back water; and such was the improvement caused by this system, that the wheel at Mr. Ainsworth's mill was frequently plunged from 5 to 6 feet in the back water, without its uniform speed being impeded. The wheel had a close sole, the tail ends of the buckets were turned up at a distance of 2 inches from the bend of the bucket, immediately above it, and terminated within about 2 inches of the bend of the bucket, immediately above it, and water, in entering the bucket, drove the air out by the aperture into the space behind, and thence into the bucket above, and so on in succession. The converse occurred when the buckets were emptied, as the air was enabled to flow in as fast as the wheel arrived at such a position as to permit the water to escape. It appeared to be allowed that this system had been very generally successful, and that the results obtained had approached, very recently, to the state of duty of the Turbine, whose powers had, however, been exaggerated, and had been allowed, recently, by M. Fourneyron, not to have obtained more than about 72 per cent. as a mean duty.

DERWENT IRON-WORKS.

The agents, engineers, foremen, &c., in the employ of the Derwent Iron Company, met on New Year's-day in the library belonging to the works at Consett, for the purpose of presenting to Mr. Forster, the manager of the works at that place, a testimonial of their esteem. The library was handsomely decorated for the occasion, and the excellent feeling displayed by the numerous party assembled was most creditable to all concerned.—Mr. T. W. PANTON, the manager of the Bishopwearmouth branch of the works, presided on the occasion. He said, it gave him great pleasure in according to their wishes, as he was convinced the testimonial was a spontaneous tribute of good feeling, and knowing also that it had Mr. Cargill's entire sanction and approbation. He had known Mr. Forster upwards of 20 years; during that period he had seen him in prosperity and adversity, and, under all circumstances, he recognised in his character untiring industry and uncompromising integrity. Those engaged in the works under him had daily opportunity of marking, and he must say, notwithstanding that gentlemen's presence, that to integrity and industry he added ability of a high order. It was a well-known fact, that Mr. Forster's management had been accompanied by the exercise of skill and knowledge in the art of iron-making, not surpassed in the annals of the trade. He (the chairman) here asserted that the art of iron-making was carried to a point of perfection never attained in any other district; bar and plate-iron of every sort, and large dimensions of first-rate quality, being produced with an economy in manufacture which he confessed surpassed him, as it did all who saw it done. Natural advantages alone would not do; to them must be added suitable arrangements and specific knowledge of the mode of managing the details of the work, and he would say that the present state of the Derwent iron-works reflected the highest credit on all parties engaged in the undertaking. The example given by Mr. Forster, of steady devotion to his duties, should not be lost, and sure he was it would not be on any one present.—The chairman then presented Mr. Forster with a handsome gold chronometer and appendages, and a silver teapot for Mrs. Forster. The watch bore the following inscription:—

Presented to Mr. George Forster, by the leading men under his orders in the Derwent Iron-works, as a token of their respect for him as a man, and of their high sense of his integrity, industry, and ability in the discharge of his duties, as well towards themselves as to his employers.

Mr. FORSTER said, he need not attempt to conceal the great pleasure he experienced in receiving from their hands so signal a testimony of their esteem. He accepted it with the liveliest satisfaction—not so much on account of the compliment paid him, as for the hearty good will it evinced towards him, so desirable between all parties in large communities like that in which they were engaged. He need not remind them how much, in such concerns, depended on the conduct of the leading man charged with the immediate carrying out the plans laid before them. He rejoiced in the circumstance which called him before them that day, and he accepted the testimony with pleasure, because in it lay the proof, that they were all in a position to do their duty to the utmost in furthering the interests of those whom they served. On behalf of Mrs. Forster he had to express the greatest pleasure for their kind present, and he was sure she would gratefully feel the compliment paid her.

Mr. Forster was loudly cheered at the conclusion of his speech, when, after the usual loyal toasts, the healths of the proprietors, lessees of minerals, agents, managers, and other officers of the Derwent Iron-Works, were drunk with enthusiasm; and, after a vote of thanks to the chairman, the meeting separated in high good humour.

Proceedings of Public Companies.

MEETINGS DURING THE ENSUING WEEK.

MONDAY.....	Bank of Australasia—offices, at One.
	Provident Clerks' Mutual Benefit Association—London Tavern, at Six.
TUESDAY.....	Derwent Mining Company—offices, at One.
	Derwent Mining Company—offices, at One.
WEDNESDAY.....	Wheal Fortescue Mining Company—Tavistock.
	London and Westminster Bank—offices, at One.
	City of London Gas-Light Company—offices, at Two.
	Cameron's Coalbrook Steam Coal and Swansea and Loughor Railway Co.—offices, at One.
THURSDAY.....	London Joint-Stock Bank—offices, at Eleven for Twelve.
	St. Katharine Docks Company—offices, at Twelve.
FRIDAY.....	Tinroft Mining Company—offices, at One.
	Australasian, Colonial, & General Life Assur. Co.—offices, Twelve for One.

[The meetings of Mining Companies are inserted among the Mining Intelligence.]

CAMERON'S COALBROOK STEAM-COAL AND SWANSEA AND LOUGHOR RAILWAY COMPANY.

A special general meeting of shareholders was held on Wednesday, the 10th inst., to receive and consider a proposition for working the collieries, which had been addressed to the committee by Mr. W. B. J. P. Cameron.

N. P. CAMERON, Esq., in the chair.

The meeting having been duly adjourned from the offices of the company to another room, and the notice being read, the CHAIRMAN briefly stated the objects of the meeting.—A letter from Col. Cameron, expressive of his readiness to attend the meeting, having been submitted, that gentleman's request was acceded to.

Mr. BURLIN presented a protest, signed by certain shareholders, to the effect that the meeting was illegal, and that any measures adopted thereat could not be recognised. He further submitted, that Mr. W. B. J. P. Cameron was disqualified to vote on a question in which he was so much interested, and that the lease of the mine was, so far as he was advised, involved in law and equity.

The SECRETARY proceeded to read the letter of Mr. W. B. J. P. Cameron, which was to the effect, that he proposed a sufficient sum should be raised to effect the "great winning," and a junction with the Llanelly Railway, and to commence and continue workings from the present openings during its progress, so soon as such junction should be effected; that he (Mr. Cameron) be allowed to superintend the carrying on of the operations, subject, however, to the approval of the consulting engineer. Upon such terms being agreed upon, he would be ready to forego all dividends on his own shares until all the other shareholders should have received 5 per cent. for seven years, and after the first seven years to pay the shareholders 10 per cent. until their subscribed capital was refunded, when the property was to revert to him.

Mr. BARRIAM moved that the proposal made by Mr. Cameron be accepted, which having been seconded, the CHAIRMAN stated, that the board of directors, in accepting the proposition, had done so simply with the object that it should be placed before the shareholders for their acceptance or rejection.

The protest of Mr. Burlin having been received, that gentleman, at very considerable length, observed upon the several points, on which those shareholders, with himself, considered they had a right to complain. In the course of the observations made by that gentleman, he took the opportunity of bringing the *Mining Journal* under the notice of the meeting, complaining of the course it had pursued, and expressing his opinion, that in the *Journal* of to-day he would be sadly abused. The honorable proprietor is mistaken, as we do not descend to personalities, but simply report proceedings; and in giving our opinion thereon, at all times, confine ourselves to "facts and figures." Mr. Burlin, in the course of his observations, stated, the Messrs. Lund, Teverham, and Hart, had been induced to land money to the company, on the faith of the assurance of Mr. Elderton, the solicitor of the company, that they might legally do so; whereas, from proceedings in the Court of Chancery which had been instituted, the result of which was, within the past two days, that gentleman had taken an opposite course, whereby the parties so advancing their money had been defeated.

Mr. ELDERTON, in reply, stated, that although the three gentlemen named had agreed to advance from 10,000 to 15,000, yet that the entire amount supplied was only 19,000, of which 14,600 had been repaid to them out of the calls; while the security held, including an acceptance given by the directors for 10,000, was no less, in the whole, than 33,000. Those gentlemen having declined making further advances, but, at the same time, holding the security given by the directors, they had thought fit to take certain proceedings in the Court of Chancery, and, having obtained an injunction, had been subsequently defeated.

Mr. WINTHROP, as a party much interested in the prosperity of the company, having advanced 5000l. by way of loan, and considering, as he did, that the property was highly valuable, expressed his regret that any course should be pursued in any degree calculated to affect the interests of the proprietors. A report from Mr. Daglish had been received, which was in the possession of the directors, and he would suggest that the same be laid before the meeting.

After some discussion, the following report from that gentleman was read:—

In accordance with your request, I beg to state that I consider it will prove to the best interest of the company immediately to set to work to get all the necessary articles ready on the site of the intended workings of the mineral ground on the Loughor estate, on the approved principle by sinking the two pits in the way I first mentioned, with sufficient capacity of steam-engine power to pump the water produced in the strata, and wind a sufficient quantity of coal, to the extent of 1000 tons per day (if required), as it is quite evident it is only by raising a large quantity that can ever sufficiently remunerate the company for the capital required to be invested, I should say not less than from 150,000 to 200,000 tons per annum, and more if a market can be obtained for the coal, as the greater the raising and the more profit will arise from such an extended opening, there being every reason to expect that, after making every allowance for dislocation of strata and waste, as well as from the best data that can be obtained at present, there ought to exist under the estate upwards of 1300 statute acres of the Broad Oak Mine, of four feet six inches thick of marketable coal, which, by proper planning, will produce 4500 tons per acre, which, multiplied by 1300 acres, will yield a total quantity of 5,850,000 tons; in addition to which the Faith Mine under the same area, of four feet thick, will produce 4000 tons per acre, making a total of 9,800,000 tons; and in addition to this, the two pits, which I have mentioned, will produce upwards of 396,000 tons, which two mines may yet be found to lie under a larger portion of the estate than has yet been ascertained, and which I have not taken into calculation. In addition to this, the thick coal, called the Nine-foot Mine, which no doubt also exists under 1300 of the like acres of the estate, and although some portion of it may lie at a greater depth than the other, but this of course may be varied, will be found to be upwards of six feet thick of gettable and marketable coal, and will produce 7,900,000 tons, which will be got at some distant time, when coal may be much more valuable, which will extend over a further period of 43 years, which, by adding to the time required to excavate the whole produced by the two seams before stated, shows that the whole quantity of the existing mines will last 104 years, before the whole of them can be raised to the surface. This clearly proves the great necessity of opening the colliery with the opinion of Mr. Daglish, as to the extent or period, of time of working the pit; yet he had no hesitation in saying, on information acquired from private sources, and on which he could place every reliance, that the coal already proved was equal to a supply for the next 50 years, as the vein calculated upon in Mr. Daglish's report. He (Mr. Smallbone) doubted not but that the sanguine expectations entertained by Mr. Daglish might be borne out, but he would be satisfied if results, in one-half the period named by him, were effected. He would, with the permission of the meeting, read a report from Mr. W. Williams, who, he had no hesitation in stating, was a practical man, and in whom he could place the most implicit confidence. After some general observations, he proceeded to read the report as furnished to him; but not being satisfied with that obtained in the first instance, he had further addressed that gentleman, whose subsequent report, with that adverted to by Mr. Williams, we subjoin:—

Agreeable with your desire, I beg to lay before you the following estimated cost of opening a new colliery at Court-y-Carne, and extending the present working department at the Coalbrook Colliery. The Broad Oak, or Court-y-Carne Coal, is 5 ft. 5 in. thick, and of a highly bituminous quality. It needs here no comment, as it is an article well-known in the market. I would, therefore, recommend you in the first place to sink a shaft near the centre of the coal basin, and at a point where it would intersect the coal at about 90 fathoms from the surface, the cost of which, together with making the road to communicate with the Loughor Bridge and the Llanelly Railway, I estimate to be about 14,845l. This outlay would effect a winning to the extent of 200 tons per day, and the coal could be worked and delivered at the port of Llanelly for 3s. 9d. per ton; this is to say—

Working at the rate of 200 tons per day, or 62,400 tons annually,	
at the selling price, 5s. per ton.....	18,720 0 0
Deduct working charges on 62,400 tons, at 3s. 9d.	11,700 0 0
	7,020 0 0
Rates, taxes, and other contingencies.....	1,020 0 0
Interest on capital at the rate of 5 per cent., 14,845l.	742 5 6
Net annual profit.....	5,257 5 6

In order fully to develop the resources of the Coalbrook Colliery, a further capital is required to the amount of about 7000l., to extend the present slope 300 yards further to the deep, and to form a communication to the Loughor Bridge, for which purpose the old Coalbrook road presents itself already more than half formed, together with the other requisite arrangements.

The Coalbrook veins, if worked properly and with judgment, would produce coal two-thirds large and one-third small, at 4s. 5d. per ton, at the port of Llanelly. Say then that the rate of working was confined to 150 tons per day, or 46,000 tons annually, the productions would be as follows:—

31,200 tons of large coal, at 9s. per ton.....	14,940 0 0
15,600 tons of small, at 5s. per ton.....	3,900 0 0
	18,840 0 0
Deduct working charges.....	10,293 6 8
	8,546 13 4
Rates, taxes, and other contingencies.....	1,000 0 0
Interest at 5 per cent.....	950 0 0
Net profit.....	5,796 13 4
Net profit at the Court-y-Carne.....	5,257 5 6
Net profit.....	11,054 8 4

The details of the above data are most carefully compiled, and I am prepared to answer any question that may be required.

WILLIAM WILLIAMS.

The property at Coalbrook is of great extent, and is capable of producing a large quantity of steam coal of the best quality in the South Wales mineral basin.—The coal under Court-y-Carne is of the best description of bituminous coal.—I consider the coal would last, at the rates described, upwards of fifty years—namely, 350 tons per day.

WILLIAM WILLIAMS.

Mr. CHALMERS moved as an amendment, that the proposal of Mr. Cameron be rejected, which was seconded by Mr. HUNT.

Col. CAMERON entered at considerable length on his position, and the course which had been pursued by members of his family. He was fully prepared to establish the correctness of every statement put forward by him, and would not flinch from any investigation. A regular row took place; all sorts of expressions were hurled from one to the other, and, without following the proceedings, it is sufficient to give the result.

Mr. STRELLY moved an adjournment of the meeting until the 17th inst., whereupon a division took place, there being 1332 votes in favour thereof, and 250 against. The meeting was accordingly adjourned.

THE GOLD MINES OF WICKLOW.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I observed, in the last Number of your valuable Journal, your notice respecting the gold mines in the county of Wicklow, Ireland, and while I entirely approve of your cautionary remarks respecting Mr. Collett's project for reviving the workings there, it may be interesting to your readers to have a short history of the different workings in that extraordinary region. It is just a little more than half a century since gold was first discovered in the streams and valleys leading from the Croghan Mountains for upwards of ten miles, in various directions; and as the deposits of it had been accumulating since the earth assumed its present form, very large quantities of gold were obtained with the slightest labour, some pieces worth as much as 80l. As is now the case in California, thousands of persons from all parts of the country flocked to these valleys of gold, and for a few years many realised large sums of money. People, however, neglected their usual avocations, the evil effects of which were soon too visible to be longer neglected. The washing-grounds became scenes of anarchy and confusion, and the Government at last sent a regiment of Infantry, took possession of the place, and commenced a more regular system of workings upon their own account. They began, of course, by appointing three commissioners at large salaries—Mr. Abraham Mills, Mr. Thomas Weaver, both eminent geologists, and with them a resident magistrate in the country, Mr. Symes. These commissioners managed to make the income meet the expenditure, but nothing more, and the rebellion in Ireland put an end to the whole affair.

It is worthy of remark, that the commissions made no improvements whatever in the common mode of washing adopted by the peasantry, which was of the very rudest description. A small company of Infantry remained to guard the place for several years, but when they were at last removed, the peasantry—men, women, and children—continued to search the streams for gold, particularly in the summer season, and, generally speaking, made, on an average, very good wages, by their uncertain avocation, frequently getting large prizes. From returns had of the quantity of gold purchased from the peasantry by Mr. Law, and other goldsmiths in Dublin, it is calculated that they produced about 2000l. worth of the purest gold every year. Some years since, a license was obtained from the Crown by some gentlemen, amongst whom was associated, as you mentioned, Mr. Crockett; but by a return, at the office of Woods and Forests, it will be seen that they only worked four months, during which time they sold gold to the value of 1800l. The failure of Messrs. Wright and a quarrel with the owner of the land, put an end to their working, so that, in fact, neither the commissioners appointed by the Crown, nor the lessees of the Crown, have done more than the peasantry. They have not made one solitary experiment, nor one trial, to discover the matrix, or source, from whence all this gold has been, and continues to be, produced.

The mode of washing is rudier than any plan adopted by the Africans in the most uncivilised part of their washing grounds. The celebrated work of Sir R. Murchison, on the Ural Mountains, has called the attention of some men to the Wicklow district, in consequence of the extraordinary analogy existing between the two places, particularly as regards the immense lode, or body, of magnetic iron ore that carries itself in such vast strength through the Carrafoot and Croghan Mountains, as well as those of Ural. It seems certain that this iron ore is the matrix of the gold. It is found with it, and, as it were, precipitated by it—so that whatever success may attend the capitalists that invest in the undertaking, it will not be denied that a highly interesting question remains to be solved respecting the gold region of Wicklow.

In the Ural Mountains, they commenced, as in Wicklow, by washings; and it is now said that the Count Demidoff and the Emperor realise 600,000l. a year profit. I know nothing whatever of Mr. Collett's company, nor his plans. I understand he took up this concern on his return from the gold regions of the Brazils; and I see by the advertisement to which you alluded, that the washing of the iron ore, and no doubt by the process of amalgamation by quicksilver, is one of the processes he means to pursue.

After I have seen a more distinct plan of his operations, I hope you may allow me to trouble you again upon the subject. The gold, as you well know, is of the purest quality, worth 37 18s. 6d. an ounce. I see by the accounts rendered, that the Bank of England bought some parcels of Mr. Wright, and Messrs. Bult and Co. bought several small parcels.—A SUBSCRIBER: Jan. 12.

[We readily give insertion to the letter of our correspondent, although it arrived at too late an hour to allow us to make some remarks thereon—which, however, may appear next week.]

PAR CONSOLS MINE.

SIR,—I regret to find, by a letter in your last Journal, from Mr. Davis, the purser of Par Consols, that I committed an error in my Review of Mining in 1848—both in the amount of dividends paid last year, and in the paid-up capital on shares in that mine. The first I had from a shareholder—the second from some old share list. With regard to the present price of shares, I apprehend Mr. Davis will find, on inquiry, that the quotation I gave was about correct. Those who merely read the statistical accounts of the various mines, given in your Journal from time to time, can form but a slight idea of the trouble there is in getting them from official sources. Two months ago, I wrote to Mr. Treffry, requesting the favour of his allowing his agents to send me the statistical accounts of this and other mines, that I might be correct in my publication, but my letter, I presume, was overlooked, as I never received a reply to it.—J. Y. WATSON: St. Michael's Alley, Cornhill, Jan. 9.

NORTH BRITISH AUSTRALASIAN COMPANY.

SIR,—The remarks in your paper of the 9th of last month have just been brought to my notice, and may, I think, be pronounced to be judicious, inasmuch as they recommend an inexpensive and amicable settlement of disputes with the company instead of litigation; and I am sure every pacific disposition on the part of the company, in anything that may occur hereafter, will be met by a corresponding one on the part of Mr. Whitaker and Mr. Heale; I say occur hereafter, because, as far as I know, there is nothing at present to settle. The company complained of, and moved for an injunction against, Messrs. Whitaker and Heale, for doing mischief to them. Upon the hearing, the judge was of opinion that no injury had been done to them; that no encroachment whatever had been made upon their rights. I do not, therefore, see exactly what "concessions and restrictions" may be wanting "on both sides;" but should any be called for on either side, I entirely agree that "an amicable arrangement" would be much preferable to litigation, and I hope no other feeling will prevail at the meeting spoken of as likely to take place.

Bampton, Oxfordshire, Jan. 11. FREDERICK WHITAKER.

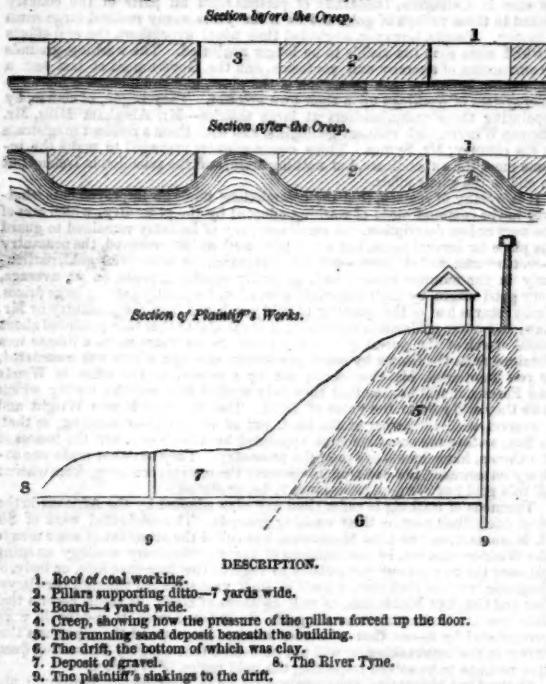
[The meeting alluded to took place at Aberdeen, on the 28th of last month, but no notice was taken of the question relating to Messrs. Whitaker and Heale.]

THE ELECTRIC TELEGRAPH.—On Wednesday, the 3rd inst., a number of scientific gentlemen met, at the new railway station, Hull, for the purpose of witnessing the testing of a submarine telegraph, which the electric telegraph company have just laid down between the new railway station and the company's subscription rooms in Bowl-alley-lane. It was a case of considerable interest to those connected in any way with submarine telegraphs, on account of the difficulty which presented itself in passing under the docks, where the depth of water varies from 18 to 24 feet; water, damp, and moisture being, as is well known, the most formidable enemies which the electric telegraph has to contend with—catching up as they do, the electric current and dispersing it in all directions. The experiment was conducted by Mr. Reid, of London, one of the company's engineers, and we are happy to say with perfect success. There were four copper wires insulated. Each wire was tested singly with a galvanic battery of 75 pairs of plates connected with a delicate galvanometer; and the insulation between each wire, and also between the wires and the earth, was so perfect as not to produce the least perceptible oscillation in the magnetic needle of the instrument. We hail this as a great step in electric telegraphy, and with the more pleasure, that there has been of late a sensible pause in its progress.—*Mechanics' Magazine.*

IMPORTANT MINING CASE.

CRAWHALL v. THE LESSEES OF ST. LAWRENCE COLLIERY.—The colliery was situated in the suburbs of Newcastle-upon-Tyne, and was worked under a lease from the mayor and corporation, upon the surface of which stood the plaintiff's property, on the brink of a precipitous bank, consisting of sand, the deposit of an ancient lake—the coal, 5 feet thick, lying at the depth of about 70 fms. underneath. As the workings of the colliery had to be carried on underneath buildings and manufactories in the year 1841, the landlords and tenants agreed to call in the opinion of two experienced viewers, who laid down rules as to what proportion of coal should be left for the preservation of the properties, which rules were followed to the letter by the lessees, to the satisfaction of both parties. Notwithstanding these precautions, and the leaving in pillars 7-12ths of the mine, yet, owing to the softness of the floor, and other unforeseen circumstances, on the 14th Nov., 1842, the workings suddenly crept—that is, the pressure of the pillars upon the soft floor produced a sudden rising all over that district of the colliery (about 10 acres), and in the course of eight days all the workings were, as far as could be ascertained, completely filled up and at rest. The effects were simultaneously felt upon the surface, both in the plaintiff's factory, and many of the surrounding buildings, but in no slight manner, that all repairs, including some trifling matters belonging to the plaintiff, were immediately, and without the least hesitation, put right by the defendants, they having admitted the fact, and from none of these parties had there ever been the least further complaint, except from the plaintiff. The agents of the defendants were permitted, for the space of nine months after the above event, to have access to the manufactory, and their constant report, as well as that of persons in the factory, was that the creep had entirely ended in the course of a very few months, and that no further damage whatever had accrued; the colliery ceased working altogether soon afterwards. In the year 1843, the plaintiff commenced to extend and improve his factory; he, therefore, cut and altered it in many respects, the most important of which were the excavation of the sand at the south front, and undersetting it for about 80 ft. in length, and 7 or 8 ft. in height, and in this new work he erected a large engine and much valuable machinery, the principal beams of which rested upon the sand in the heart of his building, to the depth of 60 or 60 ft., connected with a drift from the shore. In driving this drift, a running quicksand, attended with much water, was met with directly underneath this building, which rendered the securing of the drift next to impossible. These operations were not completed till the beginning of the year 1844; but no specific demand was made by the plaintiff, except with reference to what occurred in 1842, until the bringing of this action in April, 1848.

The following diagrams will illustrate the subject:—



During the year 1844, he also erected a remarkably massy cylindrical stone chimney, directly upon the site of the creep, the foundations of which proved an entire quicksand, and required great pains and expense in the preparation; and, as a proof that the creep has never resumed movement, that chimney yet stands erect, although the most minute motion would undoubtedly have brought it down. These buildings, therefore, and improvements were all carried on whilst it was alleged that the earth was in motion. Little more was heard of the affair, except occasional verbal complaints, until the issuing of the writ, on the 20th April, 1848, for upwards of 4000*l.*—half for damage of buildings and half for loss of profits. Upon this a request was made to examine the factory, which was refused; but from the information acquired by the defendants, they had reason to conclude that the damage complained of had resulted from the plaintiff's own operations, caused by the letting loose of the quicksand by the drift, and the shrinking of the underset walling, and not from the creep of the year 1842. An action was now commenced and great expense incurred; but judging that the case would be ultimately sent to reference, it was proposed to refer the whole matter to a practical engineer, or to a mining viewer of eminence, both of whom were rejected by the plaintiff, although the question of cause would hinge upon the creep on the coal at 70 fathoms deep in 1842, or the disturbance by the quicksand, &c., at 8 fathoms deep, in 1843-4. Eventually a barrister was fixed upon, although strongly objected to by the defendant, because of his non-practical knowledge of the nature of the question at issue, who was to hold his sitting upon the 8th January, 1849. During this period many discussions had taken place relative to an amicable accommodation of the matter; but that was rendered totally impracticable by reason of the plaintiff constantly refusing to the defendants any inspection of the factory till within a few days of the sitting. The result of such inspection showed that the movement of 1842 had all subsided shortly after that period, and that the injury complained of had resulted from the shrinking of the south front, which was especially demonstrated by the position of the principal beams of timber resting thereon, and the pillars attached to them.

The important features of the case, therefore, stood as follow:—1. Whether the creep of 1842 did not come to rest soon after, and never again resumed, as could have been proved by experienced viewers, and by the numerous small repairs of houses made in 1842 quite around the factory, wherein no subsequent movement did again occur, and the upright position of the before-mentioned heavy chimney.—2. It would have been proved that the foundations of the new part of the factory and the driftings under it were all chiefly in running sand, to a very considerable depth, and that the underset walls, and heavy machinery brought to work therein, had every probability of disturbing the foundations, and of deranging the machinery in the year 1844 and afterwards. The defendants, therefore, felt confident that, the above facts being proved, all idea of heavy damages was out of the question; but they freely admitted the small damage of 1842, which would, in point of law, carry costs (now considerable), and which would be greatly increased by the arbitration. These reasons, with others of a private nature induced the defendants to agree to a compromise.

WEST OF ENGLAND STEEL COMPANY.—We have received from a private source, but one on which we can confidently rely, information of the proposed establishment, in the west of England, of an important company for the manufacture of steel iron and steel, from the specular and other primitive iron ores of Devonshire and the west of England. It having been satisfactorily proved, that the primitive ores of iron exist in the greatest abundance and variety, and that from them iron can be produced equal, under all circumstances, to foreign, for the manufacture of steel, at a cost not exceeding 8*l.* per ton, while the five marks of steel iron, now in general use, range from 85*l.* to 112*l.* per ton, the owners of some of these mineral lands have suggested the proposed company, with a capital of 200,000*l.*, in 60,000 shares of 3*l.* 10,000 of which paid up, or 50,000*l.* to be awarded to the promoters, as compensation for transferring their interests to the company. It is proposed that 2*l.* 6*d.* per share be paid in the first instance, to raise sufficient funds to testify the correctness of the statements made; and when satisfactorily proved, the whole of the remaining capital to be paid up, of which 50,000*l.* will be required for works, 100,000*l.* for floating capital, and 100,000*l.* to form a reserve fund: 600 tons of the ore in question have been smelted with the best results, and it is intended in the operations, when carried to maturity, to employ peat charcoal in their reduction; and this process having been most successfully conducted on the continent, there is little doubt that a very superior pig iron, equal to that now produced by the use of charcoal, will be obtained.

The Compendium of British Mining.

ORIGINALLY COMPILED AND PUBLISHED IN 1843.

REVISED, CORRECTED, AND ENLARGED FOR THE "MINING JOURNAL," BY J. Y. WATSON, ESQ., F.G.S.

EASTERN DISTRICT.

WEST CARADON COPPER MINE, in the parish of St. Cleer, near Liskeard. In 256 shares, 20*l.* per share paid up. Market value, 130*l.* Conducted on the Cost-book System. Purser, Edward Anson Crouch, Liskeard. Agents, Capts. Dunstan, Taylor, and Reynolds. West Caradon in extent is 370 fms. on the course of the lodes, and about 420 fms. north and south, and consists of two sets, called Downhill and Menadue, held on leases for 21 years, from 1840, at 1-15th dues, the lords being Mrs. Fookes and Mr. F. Hendra. The mine commenced working in March, 1840, and first made returns in 1841, from which period to end of Oct., 1848, the copper ores sold have yielded 167,210*l.* 9*s.* 3*d.*; the outlay during the same time has been 137,888*l.* 7*s.* 11*d.*—viz.: 89,025*l.* 10*s.* 2*d.* paid for labour, and 48,862*l.* 17*s.* 9*d.* paid for materials, whilst 33,344*l.* have been divided as profit among the shareholders. West Caradon was the second mine worked in this district, South Caradon, to the east of it, having been discovered a few months previous. The two mines are situated on the extreme edges of two hills, a deep valley running between them; and on South Caradon proving so rich, the set of West Caradon was obtained by other parties for a trifling sum, and has realised to them the large profits enumerated above. The adit level in West Caradon is 22 fms. from surface, and the deepest level 128 fms. under the adit. Eight lodes in the set have been found productive, and upon some of them more recent discovery little has yet been done. The number of persons employed is 505—viz.: 344 men, and 161 women and boys. The produce now sold is about 300 tons of ore per month, which, at the present low standard, realises sufficient to give the shareholders a dividend of 2*l.* 10*s.* per share every alternate month. The machinery consists of four steam-engines, and the consumption of coals monthly for all purposes is about 90 tons. We hope next week to be able to give particulars of South Caradon, the first and richest mine of the district, having been discovered about 19 years ago, and divided near 60,000*l.* profit. In this neighbourhood a great many mines have been tried, some given up and others still going on: of the former, Caradon Consols, Wheal Norris, and Wheal St. Cleer were once considered promising, and had large sums expended on them. Those still working are Gonnemena, the Caradon, Craddock Moor, East Wheal Agar, Caradon Copper, Caradon United, and Caradon Wheal Hooper; of this lot, although many thousands of pounds have been spent, Gonnemena alone has returned ore, the lodes in the others not having been proved deep enough. At Caradon United, a lode 10 feet wide, of a promising description, has been cut 38 fms. deep, and is to be proved with all speed 20 fms. deeper. These mines are all on the Caradon Hills, about three miles from the town of Liskeard, and where, previous to the discovery of South Caradon, no mine was worked, or even known to exist; and when it is considered that South and West Caradon alone have in the last 12 years paid in wages and for materials nearly 300,000*l.* in the neighbourhood, the advantages and the importance of mining adventure are apparent, at least to those who have the good fortune to live in their vicinity. At the present time, the mines around Liskeard cannot pay less than 70,000*l.* a year for wages and goods.

[To be continued in next week's Mining Journal.]

Mining Correspondence.

ENGLISH MINES.

BARRISTOWN.—Capt. T. Angove (Jan. 5) reports—We have cut the lode in the 16 ft. level end of adit; it is thin mixed with lead, and rather irregular; the stopes behind this end, in back of level, are improved. The lode in the adit end east is also a little improved, producing about 5 cwt. of lead per fm.; the lode in the winze, sinking in bottom of adit level, is producing about 10 cwt. of lead per fm., but extremely difficult for sinking, on account of the great increase of water. The *Fanny Press*, of Chester, is here, taking on board her cargo for the tickling; she takes about 35 tons.

BEDFORD UNITED.—Capt. James Phillips (Jan. 10) reports—At Wheal Marquis, the engine-shaft is 18 fms. 3 ft. 10 in. under the 90 ft. level. The summen have been set to drive south in the 103 fathom level. There has been no lode taken down in the 80 and 90 ft. levels. In the 70 ft. level east the lode is 18 in. wide, composed of spar and mundic, with good stones of ore. The pitches continue to yield good returns.

DEVON AND COURTENAY CONSOLS.—Capt. N. Seccombe (Dec. 12) reports—In the end driving west, in the 40 ft. level, on the gossan lode, the lode is 20 in. wide, composed of mundic and peach, with some good spots of ore; we have cut a good stream of water issuing from the end, which indicates that we are getting into looser ground, when we may expect to have more ore. The ground in the cross-cut continues the same. In the end driving east, in the 50 ft. level, the lode is 2 ft. wide, composed of spar, mundic, and some good stones of ore, which we are saving.

EAST CROWDALE.—Capt. S. Paull (Jan. 6) reports—Diamond's shaft is again resumed sinking in favourable ground, which is composed of a light blue killas, spar, peach, a little mundic, and spots of tin; the ground is improved in the past week. Thomas's lode, in the adit level west, is looking very kindly indeed, although it does not produce so much tin as I expected it would do before this time; at any rate, the general appearance of the lode is better, it not being in the present end so much mixed with killas as it has for some fathoms back. We are carrying about 15 ft. wide, which is composed of peach, spar, mundic, killas and tin, worth from 30*l.* to 35*l.* per fm. The stopes in the back of this level produce about 20*l.* worth of tin per fm. The lode is composed of peach, mundic, spar, killas, and tin.

HERODSFOT.—Capts. John Medley and Peter Dunstan (Jan. 9th) report—The 160 ft. level is without alteration, the lode not having been cut into in either of the ends since last report; there are four men in each end working at 50*l.* per fm.; there are four pairs of men stopping the back of this level—viz.: six men at 1*l.* 15*s.* per fm., six at 1*l.* 10*s.*, and four at 3*l.* per fm.; these stopes will average about half a ton of ore per fm. In the 94 ft. level north the lode is 20 in. wide, producing half a ton per fathom; this end is driving by four men at 3*l.* per fm.; in the level south the lode has not been cut into since last report; four men are driving this end at 2*l.* 15*s.* per fm.; the winze is sinking under this level by four men at 2*l.* 10*s.* per fm., and is down 9 fms.; we hope to hole this ground before the end of the month, which will greatly facilitate the driving of the 106 south; there are seven pitches working in the back of this level by four men each, at the following tribute—viz.: one pitch at 2*l.* 10*s.* per ton, two at 4*l.* per ton, two at 5*l.*, one at 6*l.*, and one at 8*l.* 5*s.*; there are also four men stopping at 1*l.* 15*s.* per fm. The 82 ft. level north is driving by four men at 4*l.* per fm.; this end is without alteration since last report; the south end, in this level, is suspended for a short time, until we get in course of driving at Windsor shaft, which is holed to this level; there are two pitches working in the back of this level at 4*l.* per ton by four men each; the winze, under this level, is down to the 94, and the men are driving to meet the 94 end men south. In the back of this level (182 north) there are two pairs of men stopping—one pair at 3*l.* 10*s.* per fm., and one at 3*l.* 5*s.*; these stopes are turning out 12 cwt. of ore per fm., and two men rising at 2*l.* per fm.; Windsor shaft, sinking under this level, is down 7 fms. 4 ft.; we hope to get it to the 94 by the end of the month. The 72 ft. level is driving north by four men at 30*l.* per fm.; the lode in this end is producing some stones of lead, but not rich; two pitches are working in the back of this level by six men each—one at 2*l.* 10*s.* per ton, and one at 3*l.* 10*s.*; there is also one working by two men at 6*l.* per ton; in this level, south of Windsor shaft, the lode is without alteration since the last report; this end is driving by two men at 40*l.* per fm.; there are four pairs of men stopping the back—six men at 40*l.* per fm., six at 45*l.*, four at 55*l.*, and four at 80*l.*; these stopes are producing half a ton of ore per fm.; there is also one pitch working in this level by six men at 5*l.* 10*s.* per ton.

HOLMBUSH.—Capt. William Lean (Jan. 9) reports—The ground in the 132 fathom level, north of the diagonal shaft, is favourable; the great cross-course, west of the shaft, in this level, is hard, composed of compact capel, without a fissure so far as we have extended it, but we hope it will not be found of such a character for the entire width. The lode in the 120 ft. level south is 3 ft. wide, composed of quartz and stones of lead; we have from 6 to 8 fms. further to extend this level to get under the shoot of lead we had in the level above. The lode in the 110 ft. level south is 4 ft. wide, composed of quartz, and stones and strings of lead, ground very soft—being set at 35*s.* per fm.; the rise and stopes in the back of this level, are set on tribute, and we shall make the communication from the winze below the 100. The Flap-jack lode, in the 100 ft. level east, is 2 ft. wide, composed of mundic, spar, and stones of copper ore.

KIRECUBRIGHTSHIRE.—The agent (Jan. 6) reports—The lode in the 50 end, east of Stewart's, is still large, with spots of lead in it in places, and the ground favourable for driving. The lode in the bottom of the winze, in the 30 east, is 2 ft. wide, with lead and jack mixed through it, worth about 6 cwt. of lead per fm.; this has improved this week in appearance considerably.

ably. The lode is still large in the 20 east, with good stones of lead through it—a little improved. The 30 and east has not yet improved. The frost has set in rather severe, but by attention, we are able to keep our wheels working regular, although it is retarding our dressing a little.

LEWIS.—Capt. S. S. Noell (Jan. 6) reports—The lode in the 70 ft. level east is 2 ft. wide, yielding some tin and very promising; the lode in the 70 west, on the south branch, is small and unproductive. The lode in the 60 east, on the south branch, is 2 ft. wide, worth 12*l.* per fm.; the lode in the 60 west, on the south branch, is 2 ft. wide, worth 10*l.* per fm. The stopes in the back of this level are producing excellent quality tinstuff. The lode in the 50 east, on the south branch, is 2 ft. wide, worth 6*l.* per fm.; the lode in the 50 west, on the south branch, is 1 ft. wide, good saving work for tin, much improved since my last. The lode in the 40 east is 2 ft. wide, worth 4*l.* per fm.; the lode in the 40 west, on the south branch, is 1 ft. wide, producing some tin and very promising; the lode in the 40 west, on the south branch, is 10 in. wide, worth 5*l.* per fm. In the 30 west, on the south branch, the lode is 18 in. wide, and worth 3*l.* per fm.

LOSTWITHIEL CONSOLS.—Mr. John Offord, purser (Jan. 11) reports—I have pretty thoroughly measured and dialled the distances and courses of the lode and branches, and think the captain's opinion confirmed, that another 15 fms. will pierce the caunter lode in the 30 ft. level, at or near its junction with the Milham lode; we shall then have some fine tin to drive on the great caunter lode to get under the rich gossan part of it, though we think it will make good before we get there, as the branches in the upper adit were dipping northward; we have set 4 fms. at 4*l.* per fm.; a sparry cross-course has hardened the ground a little, hence this is a low price, but it will probably be easier as soon as the spar goes out, and we shall set again next week, perhaps the whole extent to the caunter.

NORTH DEVON WHEAL ROSE.—Capts. J. H. Whitford and T. White (Jan. 6) report—Agreeably to your request we have inspected the above mine, and feel much satisfaction in being in a position to inform you that it is a large set, situated north-east of the Old Combartin Mine. Four lodes have been cut in the adit; the south varies from 1 to 3 ft. wide, producing good stones of ore. The main lode has been driven on about 20 fms., and is about 2 ft. wide in places; this lode has produced some of the finest and richest silver-lead ore we ever saw—masses from 2 to 8 cwt. each. The copper lode has been explored about 40 fms.; its size varies from 1 to 3 ft., of a most promising character, composed of gossan, quartz, with oxides of copper. The north lode is about 3 ft. wide, not rich at present, but producing good spots of lead; this lode ought most certainly to be cut in the 40 ft. level, which we understand is the bottom of the engine-shaft. To drive out a cross-cut, to intersect these various lodes, is a first-rate speculation. Another lode has been cut recently still further north, 4 ft. wide, in every respect worthy the attention of any company of gentlemen. From every indication connected with the various lodes, nothing is more probable than that, if properly worked, this will one day prove a first-rate paying mine.

SOUTH DOLCOATH.—The agent (Jan. 8) reports—I have this day been underground, and find the lode in the 50 west of a promising nature, about 2 ft. wide, with spots of ore; in the 40 west the lode is 2 ft. wide, kindly, but poor; in these levels the lode is looking more promising for ore than it has been for some time past.

SOUTH WHEAL JOSIAH.—Capt. John Hambly (Jan. 10) reports—In driving on the Maria great south lode, from the bank of the Tamar, about 20 fms. west of the Maria boundary, I find the lode much improving, and is now from 4 to 5 ft. wide, carrying a fine capel on the south wall; the lode is composed of soft spar, peach, prian, and a large proportion of mundic, with spots of strong yellow copper ore, bearing altogether a healthy appearance, and such as we might expect to find before we cut a course of ore.

SOUTH WHEAL MARIA.—Captain George Francis (Jan. 11) reports—The ground in the 20 ft. level, east from the engine-shaft, has very much improved for driving—there being a very regular wall to the north of the lode, with a nice flooken in it; there has been about 6 fms. driven by its side since we last cut through it. I am glad to say, that the lode has a much more promising appearance—being easier to work since the ground has altered, composed of mundic, peach, &c., with some good strong yellow copper ore. The machinery is in good repair; and there is now very little doubt of our being able to keep out the water regular.

SOUTH WHEAL TRELAWNY.—Capt. W. Jenkin (Jan. 8) reports—The lode in the 80 ft. level, north of the shaft, is driven by six men; the ground is still subject to floors of elvan, one part of the lode on the east side is 10 in. wide, composed of mundic, fluor-spar, killas, prian, with spots of lead; the south end, in the same level, is suspended for the present, and we have resumed the driving of the 90 north, on the sparry branch close by the shaft, which is also composed of fluor-spar, flooken, mundic, killas, and spots of copper ore, and is letting down a pretty deal of water, with ground favourable.

TRELEIGH CONSOLS.—W. Symons (January 6) reports—In the 119 ft. level, east of Garden's, lode 2 ft. wide, more promising, with good stones of ore; in the 113, west of Garden's, but little done, the men have been cutting plat. In the 100, west of ditto, lode 18 in. wide, with good stones of ore. In the 90, east of east cross-cut, the lode is disordered the last two days by a cross-branch, at present poor. In the winze, below the 90 east, lode 3 ft. wide, but little ore. In the 70, west of Garden's, lode about 2 ft. wide, with stones of ore only. In the winze, below the 70, the men are driving cross-cut to cut the north part of the lode. In the 60, west of ditto, lode 2 ft. wide, not taken down this week. In the cross-cut, south from Parent shaft, we have cut the lode. In the adit east, on the middle lode, lode 12 in. wide, mundic, jack, and spar, rather more promising.

TRENANCE.—R. Dalton, purser (Jan. 10) reports—The following work was set on the 6th inst.:—No. 1, the deep adit east, to drive by three men, at 4*l.* per fm.; the above end is very hard, containing several veins of spar and steelite, with a large quantity of water.—No. 2, the south-west 12 ft. level, to stop up as directed formerly, at 2*l.* 2*s.* per fm.; this level is much the same, containing red oxide of copper, grey ore, and malleable copper, though not in such a quantity as we usually have it.—No. 3, the 18 ft. level, north-east of the winze, to drive by three men, at 3*l.* per fm.; this level is very much improved, from one wall to the other is now about 6 ft., containing several veins of grey ore, of different thicknesses, with a little malleable copper dispersed throughout. The buildings are progressing slowly, the season of the year being so very much against their speedy erection.

WEST WHEAL JEWEL.—Capt. R. Johns (Jan. 8) reports—In the 70 ft. level, west of Williams's cross-course, on the Wheal Jewel lode, the lode is unproductive—drove last month 1 fm. 4 ft. In the 57 ft. level, west of Williams's cross-course, on the same lode, the lode is unproductive—drove last month 3 fms.; in the 57 ft. level, east of ditto, the lode is worth 2*l.* per fm.—drove last month 1 fm. 3 ft. In the 47 ft. level, west of Williams's cross-course, on the same lode, the lode is 2 ft. wide, producing stones of ore—drove last month 2 fms.; in the deep adit, west of Hodges's cross-course, on the same lode, the lode is producing a little ore—drove last month 1 fm. 4 ft. In the rise in the 57 ft. level, on the same lode, the lode is worth 4*l.* per fm.—cross last month 1 fm. 2 ft. In the 30 ft. level, west of Quarry shaft, on Tolcarne tin lode, the lode is 18 in. wide, producing stones of tin—drove last month 1 fm. 4 ft.; in the deep adit, west of Quarry shaft, on the same lode, the lode is looking promising for tin—drove last month 1 fm. 2 ft.; Tregoning's shaft, sinking below the shallow adit, on the same lode, sunk last month 2 fms. 3 ft. 6 in. Tregoning's shaft, sinking below the 12 ft. level, on the same lode, sunk last month 1 fm. 5 ft. 6 in.; the stopes east of Pryor's winze, on the same lode, are worth 8*l.* per fm.; the stopes west of ditto are worth 18*l.* per fm.; the stopes in the bottom of the 12 ft. level, on the same lode, are worth 18*l.* per fm.

WHEAL ANDERTON.—Capt. J. Carpenter (Jan. 7) reports—We have sold the last week 11 tons of tin, producing 1112 2*s.* 6*d.*; 3 tons of seconds have been withdrawn, the price not being equal to produce. It is intended to put up a burning house immediately, as it will, doubtless, be to advantage, as not less, in my opinion and from assays made, than from 60*l.* to 70*l.* excess should be obtained on the present parcel of 14 tons. The mine is looking well in depth, and bears out the sanguine expectations I have ever entertained. The lode in the 80 ft. level still holds out well, also the 70 going west, which is much improved. The engine-shaft will be to the 90 in three weeks from this time. The strata is a beautiful killas (blue). I think there is not the least doubt of meeting with the lode in a very improved state in the 90 to what it is in the 70 or 80 ft. levels, as it always had a tendency to improvement in depth and extension from the first discovery we made, 8 fms. under the 70; the shoot of ore was then about 3 fms. long; its extreme length in the 80, from east to west, is now 36 fms. The greater part of this ground will be broken away, at from 6*l.* to 10*l.* in 1*l.*

WHEAL TRELAWNY.—Capt. J. Bryant (Jan. 2) reports—In the 73 ft. level, north of Phillips's shaft, the lode is 3 ft. wide, composed of hornspar, can, and lead, worth 9*l.* per fm.; the lode in the south end, in this level, is 2 ft. wide, worth 10*l.* per fm. The lode in the 62 and north is 4 ft. wide, composed of hornspar, can, mundic, and lead, worth 15*l.* per fm.; the south end, in this level, is very similar to my last report; the lode in the winze, sinking under this level, is worth 12*l.* per fm.; the stopes in the back are much the same as when I last reported. The ground in Trelawny's shaft, and in the 22 cross-cut east, is without any material change. The lode in the 52 ft. level north is still very compact, worth 5*l.* per fm.; the stopes in the back of both this and the 42 are producing a fair quantity of ore. The tribute pitches in this part of the mine are producing a moderate quantity of ore. The pitches in the north mine are not producing so much ore as was expected; the lode in the 30 end, north of Smith's, is 18 in. wide, composed of spar, can, and lead, worth 6 cwt. of ore per fm.; the ground in this end is still favourable.

Coals are now delivered in Brussels direct from the mines in Belgium, consequent on the new arrangements that have been concluded with the railways of the state and the Mons and Menage.

THE METAL TRADE.

Prices of the following on the 31st Dec. of each year—	1841.	1842.	1843.	1844.	1845.	1846.	1847.	1848.
SPELTER, per ton £30 0 to £39 0	£27 10 to £28 0	£23 5 to £23 10	£22 12 6 to £23 15	£20 10 to £21 0	£19 12 6 to £19 15	£19 10 to £20 0	£18 0 to £18 5	£15 0 0
ENGLISH BAR-IRON, per ton	3 15 to 4 0	3 15	3 5	4 0 0	3 0 to 3 15	3 0 to 3 15	3 0 to 3 15	3 0 to 3 15
PIG-IRON IN WALES, per ton	3 0 to 3 5	£2 7 6 to £2 10	2 3	2 3 6	4 2 6 to 4 5	3 17 6 to 4 0	3 0 to 3 5	2 7 6 to 3 0
AT GLASGOW, per ton	13 10	£11 10 to £12 0	10 10	10 0 0	11 10 to 12 0	11 10	11 5	11 0 0 to 12 0
SWEDISH IRON, per ton	10 10	£18	17 10	16 0 0	15 0	15 0 0 to 15 10	14 0	13 10 0 to 14 0
SWEDISH KEG STEEL, per ton	11 10	£14	13 10	12 10	11 10	11 10	11 10	11 0 0 to 12 0
COPPER, English Sheathing, per lb.	11 10	£14	13 10	12 10	11 10	11 10	11 10	11 0 0 to 12 0
" " Cake, per ton	£26 0 to £28 0	£24	£25	£24	£23	£22 10	£21 10	£20 10
TIN, English Block, per cwt.	74s to 75s	£63 6d	70s to 72s	65	62	60s	58s	56s
" Foreign Banca, Straits, per cwt.	69 to 70	60s to 61s	70s	63	61	59s	58s	56s
TIN-PLATES, IC, per box	28 to 33 6d	26 to 29	23 6d to 27s	25s to 31s	29s to 33s	27s to 33s	23s to 30s	26s to 30s
LEAD, English Pig, per ton	£20	£17 5 to £17 10	£17 10	£16 15	£19 10	£18 10	£17 15	£16 0 to £16 5
" Spanish, per ton	£20 to £20 5	17 5	16 10	16 0 0 to £16 10	18 10	17 10	17 0 to £17 5	14 15 to 15 10

can with ease be worked to the 30 or 40 fm. level under the adit, by flat rods from the Wheal Yeoland engine, at a small outlay. Negotiations are pending for this purpose; and as this is the north lode of Plymouth Wheal Yeoland, for which alone that mine was commenced, and on which good tin was raised, the development of this lode will greatly enhance the value of Plymouth Wheal Yeoland.

WEST DOWN.—The lode found here holds out good prospect of making tin.

ACCIDENTS.

Wedgebury.—A poor Irishman, James Narin, met with his death in a very distressing manner. He had been wandering about seeking work for some time, and was, from motives of pity, set on that morning to assist the bankman at one of Mr. Haines's stone-pits, near Willingworth, in this parish. He was engaged in pushing the skip to the mouth of the pit, but not being sufficiently on his guard, the skip fell down the shaft and dragged him after it. It was found that he was shattered to pieces, and his remains had to be taken home in a bag.

Sedgley.—Samuel Fellows, aged 11, was killed by a fall of coal, while working down a pit, under Messrs. Cresswell, at the Fox-yards. The father of the unfortunate deceased, who was standing within a few feet of the boy at the time, was also injured, but is going on favourably.

Tongue-lane Colliery, near Middleton.—At an early hour on Sunday last, it was discovered that one portion of this coal mine, which is in the occupation of Messrs. Whitehead, Andrew, and Co., had given way, making and leaving a hole in the earth from 15 to 20 yards in depth, and from 20 to 25, by from 30 to 40 yards across. A large oak tree, the branches of which covered a space of upwards of 100 feet in circumference, is completely buried: there is not a single branch to be seen. This occurred from 150 to 200 yards of the Mills-hill station of the Lancashire and Yorkshire Railway, and about 40 yards from a farm-house occupied by Mr. J. Booth, and about 60 yards from the old public-house known by the sign of the Cock, in Tongue. None of the above have as yet suffered. The colliery has been gutted, and the men are unable to work. Within the last few years, several houses have given way in the same neighbourhood, owing, it is said, to the props having been taken out of the mine. —*Manchester Guardian.*

On Sunday, seven workmen were employed in raising a heavy block of stone from a quarry at Chastillon, by, as usual, a large treadmill. When the block reached the mouth of the pit it was placed on pieces of wood, which broke, and the heavy mass fell to the bottom. The shock was so violent that the wheel on which the men stood was broken to pieces, and three of the men were killed on the spot, the others so seriously injured as to have to be conveyed to the hospital. —*Paris paper.*

DEATH OF MR. DAVID HIRAM WILLIAMS.—We regret to notice the death of Mr. Williams, late of Swansea, which took place in India, after a residence of four years, from low jungle fever. Mr. Williams was the son of Mr. David Williams, mineral surveyor, Swansea, and was in a fair way of achieving eminence as a practical geologist. Mr. Williams, for some time previous to his going to India, was engaged as an assistant to Sir Henry de la Beche during the period that eminent geologist was occupied in preparing a geological survey of Great Britain. The following account is from the *Morning Herald*:—"News arrived a day or two ago of the death of Mr. H. Williams, mineral surveyor to the Government, and an able practical geologist of some note. He was out on survey, near Hazareebaugh, and had a fall from his elephant. This, however, he minded so little, that he carried on his work for three days after it; but he was then taken ill of low jungle fever, carried into Hazareebaugh, and there died on the 10th inst. One of his assistants (Mr. Jones) died on the same day of the same disease, which, it appears, raging in the camp. We hear that he has left a wife and four children to lament his unexpected death." —*Cambridge.*

NEW PATENTS.

J. C. Hadden, Bloomsbury-square, civil engineer, for improvement or improvements in railway wheels.
F. Hubler, gent., Bucklersbury, London, for improvements in the construction of the cylinders or barrels of capstans and windlasses.
M. Loom, Treasurers, Cornwall, engineer, for improvements in the manufacture of fuses.
C. Michael, gent., of Albany-road, Surrey, for improvements in preparing and manufacturing India-rubber (concrete).
W. Rowe, New Wharf, Whitefriars, London, carpenter and joiner, for certain improvements in the mode of uniting or combining pipes or lengths of pipes, tubes, or channels formed of glass, earthenware, or other similar material.
W. Walker, Manchester, agent, for certain improvements in machinery or apparatus for cleaning roads or ways, which improvements are applicable to other similar purposes.
M. Wrigley, Ashton-under-Lyne, architect, for certain improvements in the manufacture of yeast or barm.
W. E. Newton, Chancery-lane, civil-engineer, for a certain improvement or improvements in the construction of wheels. (Being a communication).
J. Casley, Harpenden, Hertford, manufacturing chemist, for improvements in the manufacture of varnishes from resinous substances.
R. Urwin, Ashford, Kent, engineer, for improvements in steam-engines, which may, in whole, or in part, be applicable to pumps and other machines not worked by steam-power.
O. Blake, gent., of the Thames Plate Glass Company, residing at 13, Southampton-street, Strand, for certain improvements in ventilating or ventilators for or in ships, vehicles, houses, or other buildings.

DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

Stock and Son, Birmingham, economic water-closet.
Dixon, Sons, and Tooke, Hutton Garden, safety cistern.
Stock and Son, Birmingham, economic self-acting water-closet.
J. Hume, Ely, rain protector.
Fuller and Co., Walsall, bit for horses.
G. H. Baskcomb, Chislehurst, Kent, trine dog-cart.
T. Cartwright, Birmingham, ladies' improver, or bustle.
Simcox, Pemberton, and Sons, Birmingham, blind furniture. —*Mechanics' Magazine.*

RAILWAY TRAFFIC RETURNS.

Name of Railway.	Lgth. Rwy.	Present actual cost.	Price per share.	Last Div.	Traffic Returns 1849	1848
Belfast and Ballymena	37 1/2	—	30 1/2	—	£396	—
Birkenhead, Lancashire, & Chesh.	119	997,284	37	5 p.c.	706	680
Caledonian	141	3,993,732	22 1/2	—	3799	—
Chester and Holyhead	84	3,014,602	21	4	1047	—
Dublin and Drogheda	35 1/2	774,875	28 1/2	1	668	747
Dublin and Kingstown	47 1/2	835,515	25 1/2	6	654	719
Dundee, Perth, & Aberdeen Fanc.	67 1/2	1,167,104	43 1/2	—	677	481
East Anglian, Lynn & Ely	44	1,733,915	18 1/2	5	1929	830
East Lancashire	307	10,364,505	11 1/2	4	11478	11980
Eastern Counties and Norfolk	50 1/2	1,522,232	20	—	1012	1110
Edinburgh and Glasgow	57 1/2	2,556,889	41 1/2	6	3401	3410
Edinburgh and Northern	78	1,722,213	15 1/2	4	1939	581
Glasgow, Paisley, and Ayr	102 1/2	2,866,358	65	4	2417	2005
Glasgow, Paisley, & Greenock	92 1/2	1,484,828	14 1/2	4	589	922
Gt. Southern & Western, Ireland	131	2,844,897	28 1/2	4	2888	1990
Great Western	305 1/2	11,311,069	9 1/2	7	15170	21367
Great Eastern	104	174,600	25 1/2	—	118	100
Lancashire and Carlisle	70	1,476,102	54	4	1634	1269
Lancashire and Yorkshire	172 1/2	8,242,628	57 1/2	6	10415	8833
London and North Western	435	22,835,120	12 1/2	7	34609	33864
London, Brighton, & South Coast	162 1/2	6,284,812	33 1/2	12	510	722
London and South Western	215	7,139,733	42	6	7440	8604
Londonderry and Enniskillen	14 1/2	154,643	16	—	139	108
Manchester, Sheffield, & Lincoln	91 1/2	4,651,093	54 1/2	5	2485	1998
Maryport and Carlisle	28	448,974	40	—	—	—
Midland Company	471	13,254,006	87 1/2	6	18311	22976
Midland Great Western (Irish)	50	725,382	18 1/2	4	754	754
North British	45	1,545,496	25 1/2	—	897	—
Shrewsbury and Chester	47 1/2	780,272	11 1/2	5	1284	527
South Devon	55 1/2	1,789,351	15	11	1251	767
South-Eastern	165 1/2	7,389,322	24 1/2	6	7406	7784
Taff Vale	38	820,056	125	6	—	1646
Ulster	86	264,084	45 1/2	11	693	653
Whitehaven Junction	19 1/2	150,879	40 1/2	6	185	185
York, Newcastle, & Berwick	269	5,038,255	26 1/2	8	11138	12327
York and North Midland	255 1/2	4,179,309	52 1/2	8	6702	7908

JOINT-STOCK BANKS.

Shares.	Companies.	Paid.	Div. p. cent.	Price.
22,500	Australasia	£40	—	£168
20,000	British North American	25	—	—
20,000	Colonial	25	—	—
—	Commercial of London	20	—	18 1/2
4,000	Ionian State	25	—	24 1/2
40,000	London Joint-Stock	10	—	15 1/2
20,000	London and Westminster	20	—	23
10,000	National Provincial of England	35	—	17 1/2
20,000	National of Ireland	22 1/2	—	—
20,000	Provincial of Ireland	10	—	14 1/2
4,000	Ditto New	10	—	14 1/2
—	South Australia	22 1/2	—	—
20,000	Union of Australia	25	—	24 1/2
10,000	Ditto New	24 1/2	—	24 1/2
60,000	Union of London	16	—	10 1/2

Current Prices of Stocks, Shares, & Metals.

STOCK EXCHANGE, Saturday morning Eleven o'clock.	STOCK EXCHANGE, Saturday morning Eleven o'clock.
Bank Stock, 7 per Cent., 1891 91	Belgian, 4 1/2 per Cent., 77 1/2
3 per Cent. Reduced Ann., 89 1/2	Dutch, 2 1/2 per Cent., 49 1/2
3 per Cent. Consols Ann., 89 1/2	Brazilian, 5 per Cent., 7 1/2
3 1/2 per Cent. Ann., 89 1/2	Chilian, 6 per Cent., 69
Long Annuities, 8 1/2	Mexican 5 per Cent., 25 1/2
India Stock, 10 1/2 per Cent., —	Russian, 5 per Cent., 103 1/2
3 per Cent. Consols for Op., 89 1/2	Spanish, 5 per Cent., 14 1/2
Exchequer Bills, 1000l. 2d. 44 10 pm.	Ditto 3 per Cent., 27 1/2

MINES.—The mining share market may be considered much the same as last reported. In some mines, however, there have been more than ordinary transactions. Inquiries continue for leading mines generally, in which, indeed, we find more buyers than sellers—consequently, we may fairly expect an advance.

Business has been done in Devon Great Consols at an advance, and also in East Wheal Rose, which latter mine is represented to have considerably improved in the 90, 100, and 110 fm. levels.

In East Tamar a large number of shares have changed hands, the present quotations being the inducement.

Inquiries are being made for Tincroft at an advance; the late improvements in the mine have caused much business to be done in the shares. Tamar Consols are also in request; a dividend is expected to be declared next week. The mine has much improved, and been working, for some time past, at a profit; whilst the smelting establishment has been productive of the most gratifying results.

South Molton Consols (a lead mine in the north of Devon) is reported to have cut rich, and a demand for the shares, at former quotations, has been the consequence.

Shares in the following mines have changed hands since our last—viz.: Devon Great Consols, East Wheal Rose, Wheal Trelawny, Wheal Trehan, Herodsfoot, Mary Ann, Tincroft, Tamar Consols, Drake Walls, Stray Park, West Caradon, East Tamar, E. Crowndale, Mendip Hills, &c. Gwincar Consols meeting of adventurers was held on the 1st Jan., for the purpose of auditing the accounts for Aug., Sept., Oct., and Nov., when a balance of 943l. 1s. 4d. was found against the mine. A call of 11s. 4d. per share was made, for its further prosecution.

South Wheal Tolguis two-monthly meeting was held on the 27th Dec., when the company was debited with a balance of 4l. 14s. 4d. Ores sold during the two months realised (less dues) 709l. 15s. A profit of upwards of 200l. has been made on the two months' working. It appears three months' cost, including Nov., is charged against Sept. and Oct. ores, which shows an apparent loss; however, the next account will have the benefit of an additional month's raisings. By the agent's report, the mine has recently improved—the adit and 12 fm. level previously being less productive.

East Tamar Consols bi-monthly meeting was held on Friday (yesterday), when the statement of accounts presented, and the manager's report, appeared to create the liveliest satisfaction among the shareholders, as to present and future prospects.

From the returns issued last week by the Board of Trade, we find that for the month ending Dec. 5, the increase in the exportation of copper and brass, over that of the corresponding period last year, was 43,622l. value, and tin plates 10,999l. In lead and tin there was a decrease, and in iron and steel a very considerable deficiency.

In foreign mines there has been an active inquiry for St. John del Rey, and business done at an advance. United Mexican, Imperial Brazilian, Bolanos, and Copiapo, have also found buyers.

Dispatches have been received by the Imperial Brazilian, St. John del Rey, National Brazilian, and Copiapo Mining Companies.

The Imperial Brazilian letters are to the 2d November. The gold returns from Gongo Soco, from the 13th Oct. to the 2d Nov., amounts to 12 lbs. 6 ozs. 17 dwts.; and from Bananal for the same period 20 lbs. 0 ozs. 11 dwts. The total returns from the two mines from the 1st July to the 2d Nov., is shown to be 204 lbs. 6 ozs. 16 dwts. By the report, we find that at Bananal they have cut the plat in the 7 fm. level, south of Hollingsworth's shaft, and commenced driving towards the ground under the adit level, from whence some fine lumps of gold were found. At Thomas's shaft, some very good work had been extracted; but, some necessary pit-work being required, a little delay has been the consequence: operations would be resumed in a few days from date of advice. These, at present, appear the chief points of attraction.

The St. John del Rey advices are to the 28th of October, and furnish a most satisfactory report as to the returns, and highly encouraging as regards the prospect of the mine. The gold extracted for the first 10 days of the month appears to be 6088 ozs.; for the following 9 days, 6396 ozs.—making 12,484 ozs. in 19 days' stamping. The report states that they were improving as they progressed in driving on the new lode, on which they had advanced about 12 fathoms, and the stone then breaking was estimated at above 3 oitavas per ton.

The National Brazilian letters are to the 2d November, which are also satisfactory, inasmuch as they hold out a prospect of improvement, with an advance on former returns. The produce for 20 days' working is stated to be—Cuiaba, from 6th to 16th October, mks. 5 1 6 15; 16th to 26th Oct., mks. 4 0 0 6. Cocoes, from 14th to 23d Oct., mks. 3 0 0 50; 24th Oct. to 3d Nov., mks. 4 3 1 1.

Copiapo letters are to the 29th Oct.—a full report of the mine will be found in another column.

The following arrivals of specie have taken place since our last publication:—By the Peninsular and Oriental steamer, *Idris*, which arrived at Southampton on the 6th inst., 45 packages of specie have been received. By the Royal Mail Steam-Packet Company's ship, *Thames*, which arrived at Southampton on the same day, with the West India mail, the following valuable freight has been received:—£769,408 on merchants' account; gold coin, value 844l.; 1600 ozs. of gold-dust, and two boxes of platinum—total value of specie, 174,000l. H. M. P., *Crane*, arrived at Falmouth on Sunday, the 7th inst., bringing the Brazilian mail, and freight, in gold, silver, and diamonds, about 25,000l. value. The Peninsular and Oriental Steam Company's ship, *Exeter*, arrived at Southampton on Tuesday evening, having on freight 100 packages of specie, about 70,000l. sterling value.

HULL, THURSDAY.—The market has been pretty well sustained since our last, with however, a very moderate amount of actual business. Malton and Driffield are inquired for at the low prices, and Darwens have changed hands at 7 1/2 to 6l. per share.

LONDON AND NORTH-WESTERN RAILWAY.—Mr. Creed, the late secretary, has been elected a director, in the room of Mr. Benbow, M.P.

CALEDONIAN RAILWAY.—Mr. Glyn, jun., has been appointed a director of the Caledonian railway in the place of Mr. Monteith.

CONWAY TUBULAR BRIDGE.—The deflection which took place last week, at the testing of the second tube over the River Conway, by Captain Symonds, the Government inspector, was very slight, and the result highly satisfactory. Before any of the testing weights were drawn into the tunnel, it was ascertained that the deflection then existing was 1.86 inch. The testing ballast, amounting to 235 tons 14 cwt., caused an additional deflection of 1.56 inch only, thereby showing that, with the whole of the above superimposed weight, the departure from a straight line was only to the extent of 3.42 inch. The load having been withdrawn, in less than 10 minutes the whole structure regained its former deflection. The variation in the tube, which has now been in use for so many months, does not, we believe, extend to the 16th part of 1 inch.

It is said that arrangements have been made for sinking a colliery, on an extensive scale, on the freehold estate of the Rev. J. W. Smith, at the west end of the village of Ryhope, and that the Haswell Coal Company are the lessees. The winning will be an important one from its ready access to Sunderland as a port of shipment: and the character of the coals has, to a certain extent, been already proved by the winnings made recently in the neighbourhood. —*Durham Advertiser.*

LATEST CURRENT PRICES OF METALS.

LONDON, JANUARY 12, 1849.

IRON—Bar a. Wales, per ton	£ s. d.	COPPER—Ordin. sheets, lb.	£ s. d.
London	0 0 5 1/2	Old	0 0 0 1/2
Nail rods	0 0 6 10	Yellow Metal Sheet	0 0 0 1/2
Hoops	0 0 8 0	TIN—Com. blocks g. cast.	0 0 3 10
Sheets, single	0 0 9 0	" bars	0 0 4 0
Refined metal	3 10 3 15	Refined	0 0 4 6
Bars, Staffordshire	0 0 6 15	Straits	0 0 4 2
Pigs, ditto	0 0 3 15	Banca, for home con.	0 0 4 6
Welsh cold-blast	3 10 4 0	ditto for export only	0 0 4 2
foundry pig	3 10 4 0	TIN-PLATES—Ch., IC, 2oz	0 0 1 10
Scotch pig, Clyde	0 0 2 7 1/2	IX	0 0 1 6
Do. toughened, Wales	0 0 4 5	Coke, IC	1 6 1 7 1/2
Stirling's Pat., Glasg.	3 19 3 15	LEAD—Sheet a. for	16 10 16 15
Rails, average	5 5 15 0	Pig, English	0 0 15 15
Chairs	0 0 4 5	" Spanish	14 15 15 10
Russian, CONDO.	0 0 17 0	Red	0 0 18 0
Archangel	13 10 13 0	White ditto	0 0 22 0
Swedish Steel, flat d.	0 0 15 0	Shot (Patent)	0 0 18 0
" kegs	12 0 13 0	SPELTER—(Coke) on spot	15 15 15 0
Copper—Tile	0 0 78 10	For arrival	0 0 15 10
Tough cake	0 0 79 10	ZINC—(Sheet) m. export.	0 0 20 0
Chill	70 0 75 0	QUICKSILVER	0 0 0 3 6

REMARKS.—We have again to report a steady and increasing demand for all descriptions of iron, at improved rates. At the Birmingham Quarterly Meeting yesterday, the general prospects of the trade were considered most cheering. Large purchases of hoops, sheets, and rods, were readily entered into at prices highly satisfactory to the makers. Large sales of Scotch pig-iron have been made during the week, at 47s. 6d., cash, and at 50s., bill at four months. In other metals no alteration.

BIRMINGHAM, JAN. 11.—The third quarterly meeting of the ironmasters of this district, held at the Town Hall, was numerously attended—the principal houses of London and Liverpool being represented; and the tone and spirit of the meeting exhibited a very gratifying contrast to the gloomy meetings held during the past year. There was an advance, fresh orders were sought at present prices. The stocks of buyers being low, and a pretty general conviction prevailing that prices had come down to the lowest point, there was an evident disposition to order; but the manufacturers, knowing the current rates were not sufficiently remunerative, were unwilling to sell, except for present delivery. Some good American orders were said to have arrived; and it was also stated, that there are now on the order books demands sufficient to keep the furnaces at full work two out of the ensuing three months. It is, therefore, no small source of gratification to find the demand so marked an improvement in one of the most important branches of our national industry; and that, in place of anticipating an unfavorable outlook and reduced wages, we may look forward at the commencement of the new year to far more encouraging prospects.

STOUBRIDGE, JAN. 12.—The fourth meeting of the ironmasters of this district was held here, and the reports fully sustained the favourable accounts from Walsall, Wolverhampton, and Birmingham. The meeting was very numerously attended, although held in one of the most remote parts of the district. The representatives of the large houses in this neighbourhood were all present, and confirmed the accounts given at the previous meetings of reduced stocks, and a steadily increasing demand. To-morrow the last meeting will be held at Dudley, when, as usual, the final confirmation of the quarter's prices will be made

Liverpool have been numerous, amounting in all to about 1800 tons. From the circumstances above mentioned, South American copper will become an article of great consumption, and the heavy shipments previously made to the continent will, doubtless, find a ready sale in these markets for home use; the value of good quality is about 74s. per ton, 3 per cent. discount for cash. Several hundred tons of refined, in ingots, have been sold at about this figure.

BRITISH TIN, after having been gradually lowered from 83s. 10s. for bar, to 74s. in September, has quickly recovered, and the market is steady at the following rates:—Bar, 80s. per ton, free on board in London, discount 2s. per cent.; ingots, 79s. 10s. per ton, free on board in London, discount 2s. per cent.; block, 79s. per ton, free on board in London, discount 2s. per cent. Of E. I. tin the stock consists of 25s. tons—Banco has been firm at 86s. Straits have advanced to 82s. per ton. Spelter rapidly fell from 20s. to 13s. 10s., gradually reaching 15s., at which sales to some extent were made for India. After receding a few shillings, it has improved fully 15s. per ton since Saturday, and several parcels have changed hands at 15s. 10s. per ton. There are now no sellers under 15s. 10s. The stock is about 2000 tons.

BRITISH LEAD has been selling quietly for home consumption, and rather more inquiry has been exhibited for exportation within the past month; at the following prices orders may be executed:—Fig. 15s. 15s., less 2s. per cent. discount, free on board in London; about 16s. 10s., less 2s. per cent. discount, free on board in London. Spanish is rather dull; 150 tons changed hands at 15s. per ton a few weeks since; the price may be quoted 15s. 10s. to 16s. for the best brands. Very little demand at present. Of American lead there are no arrivals, the low price of English keeping it out of the market. Australian lead ore has continued to arrive, and has readily sold at remunerative prices. The quality is very good.

THE PLATES have been in brisk demand throughout the year; the trade being confined to a few numbers, the supply has been barely sufficient, and the prices have improved since the summer is. 6d. to 2s. 6d. per box, a very limited quantity is offering for sale. The demand continues good, and the following quotations are fully realised:—Coke I. C., 27s. per box, free on board in London, discount 3 per cent.; charcoal, 30s. 6d. per box, free on board in London, discount 3 per cent.

QUICKSILVER has fallen to 3s. 6d. per lb. In concluding this statement, I have to observe, that the accounts from the various districts, and the favourable disposition of buyers, have fully justified the intimation given of the improving prospects of the iron trade, and we have reason to hope that improvement will be permanent, as the sales which are being made are for the supply of actual wants.—C. R. MOATE: Old Broad-street.

EXPORTS OF METALS TO ALL INDIA FROM LONDON AND LIVERPOOL, FOR THE YEARS 1847 AND 1848.

Metals.	1847.	1848.	In. in 1848.	Dec. in 1848.
Spelter	3553	3552	99	—
Copper	10976	20617	9641	—
Iron, British	847	330	—	508
Do, foreign	7308	4024	—	3284
Tin-plates	1059	926	—	178
Lead	852	235	—	287
Steel	50	45	—	5
Quicksilver	—	—	—	—

EXPORTATION OF THE PRECIOUS METALS.—The following are the official returns of the exports of gold and silver from the port of London for the last week:—Silver coin to Belgium, 27,320 ounces—Silver bars to ditto, 8006—Gold coin to ditto, 235; ditto to Mauritius, 800.

CURRENT PRICE OF GOLD AND SILVER.

Foreign gold, in bars, per oz. £3 17 9	New dollars, per oz. £2 4 10
Portugal pieces, per oz. 0 0 0	Silver in bars (standard), per oz. 0 4 14

PRICES OF MINING SHARES.

BRITISH MINES.				BRITISH MINES—continued.			
Shares.	Company.	Paid.	Price.	Shares.	Company.	Paid.	Price.
1000	Aberystwyth	1	24	2048	Hannaford Colombe Tin	3047	—
512	Albert Consols	5s. 6d.	—	128	South Caradon	10	300
1024	Alfred Consols	5s. 6d.	—	1100	South Dolcoath	4	5
1000	Antimony & Silver-Lead	5s. 6d.	—	206	St. Friendah. Wh. Ann	20	4
1024	Ashburton United Mines	5s. 6d.	—	256	South Molton	5	20
1624	Ballewidden	5s. 6d.	—	256	South Tolgus	10	55
128	Balnoon Consols	2s. 6d.	—	256	South Trelawny	261	3
10000	Banwen Iron Co.	5s. 6d.	—	3000	South Wales Mining Co.	3	24
1000	Barnstaple	5s. 6d.	—	128	South Wheal Bassett	110	150
1000	Barnstaple	5s. 6d.	—	124	South Wh. Frances	160	20
1244	Birch Tor Tin Mine	5s. 6d.	—	256	South Wh. Josiah	—	14-2
1000	Blancaton	5s. 6d.	—	1000	South Wh. Maria	25	14
100	Botallack	18s. 6d.	—	10000	South Western Irish	2	4
120	Brewer	5s. 6d.	—	256	Sparrow Moor	80	40
10000	British Iron, New Regd.	10	10	256	St. Austell Consols	7	64
128	Budock Consols	5s. 6d.	—	256	St. Austell Consols	7	64
1000	Callington	19	14	94	St. Ives Consols	—	320
1000	Cambarne Consols	5s. 6d.	—	128	St. Michael Peakivel	5	104
30000	Cameron's Steam Coal	6	1	999	St. Minver Consols	1	6
256	Caradon Copper Mine	5s. 6d.	—	1000	Stray Park	43	19
256	Caradon Mines	22s. 6d.	—	9600	Tamar Consols	3	64
256	Caradon United	24	18	1024	Tavy Consols	4	4
256	Caradon Wh. Hopper	21	8	1000	Tincote	7	64
1000	Carn Brea	15	100	1000	Tin Vale	28	64
3000	Carton Consols	13s. 6d.	—	8	Tockenbury	170	10
112	Charlestown	22s. 6d.	—	256	Tollpetherwin	34	5
512	Clashtie Hill	5s. 6d.	—	256	Tregadorn	2	5
500	Comblaw	5s. 6d.	—	256	Trehan	25	30
128	Comfort	4s. 6d.	—	5000	Treleigh Consols	6	14
256	Condurrow	4s. 6d.	—	2000	Trevelan	10	150
256	Coode's Kitchen	14	2	120	Trevelan	5	16
1000	Coombe Valley Quarry	24	4	128	Trevelan & Barrier	130	84
6500	Cornish Mining Co.	2s. 6d.	—	256	Trevelan	14	5
20000	Cornwall New Mining	1	1	100	United Mines	350	350
1000	Coppar Bottom	13s. 6d.	—	256	Wellington Mines	35	20
1024	Coheen	4s. 6d.	—	256	West Caradon	20	130
212	Craddock Moor	12s. 6d.	—	512	West Fowey Consols	40	12
128	Creeg Brawa	2s. 6d.	—	256	West Fowey Consols	40	12
500	Cubert Mine	12s. 6d.	—	256	West Fowey Consols	40	12
1000	Cwm Erfin	24s. 6d.	—	200	West Seton	40	210
3000	D. Prior & Buckfastleigh	—	—	—	West of Scotland Iron Co.	240	90
7100	Derwent	8s. 6d.	—	120	West Trelawny	5	30
845	Devon & Courtenay Con.	7s. 6d.	—	256	West United Hills	—	44
1024	Devon Great Consols	1	230	512	West Wheal Frances	13	2
1000	Donhead	30	15	256	West Wheal Jewel	9	8
185	Dolcoath	30	15	256	West Wheal Tolgus	214	5
2560	Drake Walls	5s. 6d.	—	256	West Wheal Treasury	19	10
1000	Durham County Coal	4s. 6d.	—	1024	Whiddon Mines	48	4
3000	Dyffryn	10	124	5200	Wicklow Copper	5	71-4
512	East Alvenney	5s. 6d.	—	107	Wheal Adams	79	30
112	East Caradon	47	47	1000	Wheal Agar	—	8
2048	East Crowndale	47	47	256	Wheal Albert	10	1
512	East Comb & Silver	5s. 6d.	—	240	Wheal Anderson	3	15
128	East Pool	15	40	128	Wheal Ann	—	504
9000	East Tamar Consols	3s. 6d.	—	512	Wheal Anna Maria	64	8
—	East Wheal Albert	1	3	1024	Wheal Ash	48	8
94	East Wheal Crofty	12s. 6d.	—	120	Wheal Bal	54	20
1024	East Wheal Fortune	2	3	256	Wheal Benny	144	2
128	East Wheal Rose	50	60	256	Wheal Blencowe	21	5
128	East Wheal Seton	14	10	256	Wheal Blencowe	21	5
1280	Eggar Lli	1	2	256	Wheal Calstock	30	5
256	Exmoor Wh. Eliza	6	9-10	1024	Wheal Coad	1	4
512	Fowey Consols	40	45	256	Wheal Courtenay	124	15
1024	Fredd Lwydd Mines	14	24	256	Wheal Fortescue	64	3
6400	Gadair	2	2	384	Wheal Franco	27	18
4000	Gen. Mining Co. for Irel.	14	15	128	Wheal Harriet	45	—
256	Gonnamena	4	2	100	Wheal Henry	—	314
128	Gourey	4	2	1024	Wheal Lawrence	79	20
100	Great Consols	1000s.	250	112	Wheal Margaret	79	20
1900	Great Mitchell Consols	14s. 6d.	—	512	Wheal Mary Ann	5	14
256	Great Reagusa Moor	11	6	208	Wheal Mary Consols	604	8
512	Gr. Wh. Rough Tor Con.	14	11	—	Wheal Penhale	—	12
1200	Grows Slate Company	5	5	210	Wheal Prospect	—	4
256	Gwynar Consols	7	1	120	Wheal Reeth	41	150
6000	Hagston Down Con.	1	1	128	Wheal Rose	60	5
256	Heroddeford	18	22	180	Wheal Sisters	214	790
10000	Hibernian	124	15	1024	Wheal Sophia	31	5
239	Hobbs Hill	6	14	128	Wheal Spurne	10	75
1000	Holmshush	22	14	128	Wheal St. Ann	30	35
1024	Kingsett and Bedford	5	3	550	Wheal Trescoll	4	54
627	Kirkcubrightshire	54	2	200	Wheal Trelawny	74	70
256	Lamheroe Wh. Maria	13	13	256	Wheal Tremayne	54	2
252	Lanarth Consols	3	10	1024	Wheal Trypenny	140	205
128	Lelant Consols	90	60	1000	Wheal Vincent	14	6
160	Levant	—	120	256	Wheal View (Ferrans)	1	60
1000	Lewis	16	8	184	Wheal Vyryan	—	60
1000	Llynny Males	74	7	250	Wheal Williams	—	284
9600	Llynny Iron	50	50	1024	William & Mary Worth	2	24
256	Lostwithal Consols	19	14				
6000	Marke Valley	10	14				
2000	Marine Hill	3	14				
5000	Merionethshire Slate Co.	14	2				
128	Metha	34	140				
20000	Mining Co. of Ireland	7	4				
256	New East Crowndale	34	24				
128	North Fowey Consols	37	10				
1000	North Pool	45	500				
140	North Roskell	24	165				
262	North Wh. Lelaure	14	2				
10000	Northern Coal Co.	23	2				
128	Par Consols	558	1000				
8000	Pennant & Craigwen	2	2				
100	Penrhyn	30	65				
1024	Penzance Consols	164	34				
512	Plymouth Wh. Teolund	61	10				
2000	Poleath Consols	3	44				
2500	Rhowidol & Bacheidion	10	10				
10000	Rhymney Iron	50	13				
10000	Ditto New	7	61				
1000	Rosewall Hill	1	5				
256	Rosewarva Mines	—	12				

* We should feel greatly obliged by agents, or others interested, furnishing us with such corrections for our Share List as we may not have received through our usual channels of information—our object being, to present as accurate a list of prices as can be obtained—to procure which, we solicit the aid of correspondents in general.

IMPROVEMENT IN PROPELLING STEAM-VESELS.—Mr. Wm. J. Dalley, of Lambeth, has taken out a patent for a propeller, to be placed in a horizontal position a little above the keel of the vessel. It consists of a paddle-wheel, in a case, so placed that the paddles project sufficiently to have a useful effect in the water; each paddle turns in a recess on a box fixed on the main shaft, and on the axis of each are placed two pieces of hardened steel at right angles with each other. On the cover of the box is a guide, with two stops next the side of the vessel, and as each propeller is just emerging into the water it assumes a vertical position, and presenting its flat side, propels the vessel; but, just on leaving the water, and entering the case, one of the iron pieces catches the other stop, when it is instantly feathered and enters horizontally, thus having no counteracting power on those in the water.

NOVEL PROPELLER FOR STEAM-VESELS.—Lieut. Col. Sir T. Livingston Mitchell, has secured a patent for a new form for the screw propeller of vessels. The inventor has observed the peculiar motion of the "bommareng," in its rotary motion through the air, that of whirling round a hollow centre, leaving a vacant centre of gravity; and it suggested itself to him, that this centre might be in a line dividing the two eccentric parts, so that they should be together equal to the remaining central portion; on experiment this view was confirmed, and he considers an angle, similar to that of the "bommareng," will prove the best form for the application of the screw principle in propelling vessels. Motion is communicated as usual to the shaft, and the blade of the propeller may be made with one side convex, and the other flat, or with two flat or two convex sides; when made flat it will be necessary to chamfer the edges. It may be constructed with more than one blade; but it is considered one will answer better than two or more.

LEAD ORES

Mines.	Tons.	Amount.	Purchasers.
Calnamore	40	£9 1 0	Walker, Parker, & Co.
East Wheal Rose	70	£11 15 0	Sims & Co.
ditto	68	19 3 0	J. T. Trefry.
Callington	72	£16 11 6	T. Somers.

BLACK TIN

Mine.	Tons.	Price.	Purchasers.
Wheal Anderson	24	£43 0 0	J. H. Enthoven & Co.
ditto	18	39 17 6	ditto
ditto	2	28 5 0	Daubuz.

COPPER ORES.

Mines.	Tons.	Price.	Mines.	Tons.	Price.
Carn Brea	113	£6 9 0	Levant	68	£3 11 6
ditto	99	5 5 6	ditto	59	6 2 0
ditto	72	8 7 6	ditto	44	2 2 0
ditto	70	4 8 6	Wh. Tremayne	59	2 1 0
ditto	69	6 7 6	ditto	43	1 1 0
ditto	65	4 13 0	ditto	34	4 13 0
ditto	60	4 9 0	Wh. Agar	72	4 2 0
ditto	59	3 7 6	Alfred Consols	53	1 11 0
ditto	44	5 14 6	ditto	18	4 14 0
ditto	25	1 10 6	Wh. Buckette	27	3 1 6
Far Consols	103	5 17 0	Wh. Prosper	23	2 13 0
ditto	56	5 19 0	Gwynar Consols	8	0 5 0
ditto	62	6 15 6	Wh. Virgin	11	2 9 6
West Wh. Treasury	71	3 18 6	Godolphin	10	4 6 0
ditto	70	4 6 6	Trenoweth	7	2 7 6
ditto	54	4 5 6	Wh. Jane	4	1 10 0
ditto	40	3 1 6	Craze's ore	3	3 4 0

TOTAL PRODUCE.

Carn Brea	676	£3660 9 6	Wh. Prosper	23	£6 19 0
Far Consols	355	2030 18 0	Gwynar Consols	12	23 14 0
West Wh. Treasury	235	935 5 6	Wh. Virgin	11	27 4 6
Levant	171	695 8 6	Godolphin	10	40 5 0
Wh. Tremayne	136	5 6 6	Trenoweth	7	16 12 6
Wh. Agar	72	295 4 0	Wh. Jane	4	6 0 0
Alfred Consols	71	166 15 0	Craze's ore	3	9 12 0
Wh. Buckette	27	83 0 6			
Average Standard	£ 87 7 0	Average Produce	£ 12 6		
Quantity of Ore	1813 tons.	Quantity of Fine Copper	152 tons 18 cwt.		

LAST SALE.—Average Standard, £ 91 3 0.—Average Produce, £ 74 Standard of corresponding sale last month, 87s. 9s.—Produce, 8s.

COMPANIES BY WHOM THE ORES WERE PURCHASED.

COMPANIES BY WHOM THE ORES WERE PURCHASED.					
		Tons.			
				Amount.	
Mines Royal.....	180	£	287	3	0
Vivian and Sons.....	452		2133	17	3
Freeman and Co.....	410		1458	9	0
P. Grenfell and Sons.....	31		86	13	0
Sims, Williams, and Co.....	232		1090	9	0
Williams, Foster, and Co.....	442		2474	13	0
Schneider and Co.....	66		208	16	0
Total tons.....	1613	£	8,376	13	0

of greater ones to follow. This was too much the character of the entire year, and how injurious, how ruinous to commerce, and the confident intercommunication of nations, these recollections of the past, and forebodings of the future, must needs be, we need not now delineate.

Notwithstanding this series of storms, the commercial success of the year is highly satisfactory, and under the circumstances, to our minds, surprising. The tempest, terrible as it was, was not strong enough to take the buoyancy out of the commercial principles upon which we had embarked; and certain it is, that had our course been fettered by the old restrictions, or superintended by the old helmsman, our commercial voyage last year would have been more nearly bounded by the Isle of Dogs, than enlarged to the circumnavigation of the globe. The particular department of industry to the progress and elucidation of which our Journal is devoted, has endured some of the drawbacks and hindrances which have beset almost all the springs of our productive wealth. In mining operations there has not been that activity, nor have they produced that remuneration which the skill, and diligence, and capital dedicated to them, had induced the public to hope and to expect. We have been sharers in the general interruption which business has sustained; but we are again feeling a breeze, and filling out our sails. An active prosecution of this branch of industry is reviving, better prices for mining produce are ruling in the market, and we fully expect to see a better scale of profits to adventurers, and of wages to operative miners prevailing, than has recently been the portion of either. With the Consolidated Three per Cents. up to 89, money must be in great abundance, and waiting but the smallest conceivable impulse to secure its investment. We begin, therefore, 1849, with a large capital in hand, and anticipate the happiest results from its seasonable and judicious mining application; and it is on these prospects, as well as on the results actually realised in the year just expired, that we wish to congratulate our mining friends, both far and near.

The proceedings at the CAMERON STEAM COAL COMPANY meeting, to which we have had occasion to revert the last two or three weeks, will be found in another column. We regret that the "leader" of the opposition should have descended to have marked us for his "game;" but, such being the case, it behoves us to say a word or two in defence, or at least on behalf of ourselves; while we shall endeavour to avoid the course he contemplated, that of pouring upon him in this week's Journal a "torrent of abuse." Ere entering on any remarks, with reference to ourselves, it may be well to refer to the position of the company, of which we have already expressed our opinions, regardless of vendors or vendees; while we cannot but think it somewhat strange, in times like the present, that shareholders should so freely advance their money, without first inquiring as to the merits or value of the undertaking in which they embark their capital.

We have, since the meeting took place, ascertained (having had the opportunity of conversing with parties well conversant with, and who have surveyed the property) the terms proposed on the part of certain copper smelters for its acquisition; these are now before us, and we must say, we think the lesser in the wrong in not accepting them. We are aware the amount obtained from the present company exceeds that proffered; yet, the evidence placed in our hands, satisfies us that the property in extent, if properly worked, with a proper and economical management, would yield a fair return to the shareholders.

Mr. BURLS, at the meeting, having made some remarks as regards the course we have taken with reference to this company, and wishing to convey an impression that we were dishonest, having referred to the Journal of the 10th June, 1848, we have only to direct the attention of our readers to the following extracts, and which we cannot doubt for a moment but will satisfy our readers as to the motives which have influenced us, as to the company under notice, at the same time, that we are ever anxious to uphold and support the mining interests:—

"The development of our coal measures may be considered as of national importance, adding to the wealth acquired from the mineral resources of the country, and, at the same time, affording employments in those districts where it may be said to be most required. Among the many schemes brought forward, or companies formed, during the past few years, that of Cameron's Steam-Coal Company took a prominent position; and, judging from the progress it has made and its quiet course, would appear to be advancing to the attainment of the object put forward in the prospectus of the company, and which has been, in a great measure, borne out by the reports at the several meetings of shareholders held since its establishment. Having had an opportunity of acquiring information on which every reliance may be placed, we readily avail ourselves of the same—so that, in submitting the results of our inquiries, we may be enabled not only to render information to the shareholders generally, but, as we hope, induce capitalists to direct their attention to the mineral products of this country, holding out as an example the advantages attendant upon mining or colliery operations, where the one or other is conducted with economy and good judgment, and where the parties to whom is confided the management are themselves largely interested in the benefits to be derived from the profitable working of the concern."

"We shall at all times feel favoured by correspondents rendering us information with reference to any operations connected with mining or colliery matters, whereby we may, through our columns, give publicity thereto, and, at the same time, furnish intelligence of advancement made in our mineral districts."

We have quoted the first and last paragraphs—those intermediate are matters of fact, acquired from the office of the company.

In our last week's Number, we referred to two of the existing patents of Messrs. STAITE and PETRIE. We have now to mention that, on Friday, the specification of a patent, sealed the 12th July last, was enrolled by Mr. STAITE. The title of the patent runs thus:—"For improvements in the construction of galvanic batteries in the form of magnets, and in the application of electricity and magnetism for the purposes of lighting and signaling; as also a mode or modes of employing divers galvanic batteries, or some of them, for the purpose of obtaining chemical products, parts of which improvements are a communication."

Our readers will see that the range of this patent is most comprehensive. The wonder is, that anything could remain available for other inventors. However, we have two other claimants in the field—the Chevalier ALEXANDRE EDOUARD LE MOLT and Mr. FESSLELL ALLMAN, to whose inventions we shall presently turn.

Messrs. STAITE and PETRIE are unquestionably first in the field in this country, having outstrip their competitors several years. The first patent was in the name of GREEN and STAITE, in January, 1846; then follows the patents in Mr. STAITE's name, in the years 1847 and 1848, to which we referred; and, finally, the patent of which we have given the title above.

M. LE MOLT, whose light was shown some years ago in Paris, makes his first appearance in this country (as far as we are apprised by the records of the Patent-office) on the 12th of July last, and was then opposed by STAITE; notwithstanding which, his patent passed the seal, with a report in favour of the five points claimed by him. The title of this patent is—"For certain improvements in apparatus for lighting by electricity, parts of which may be made use of in other applications of electricity." This patent is dated the 20th July; on the 20th inst. the specification will be enrolled, and we shall, in our Number of the ensuing week, give an abstract of it.

Mr. ALLMAN is the next aspirant to claim the honour of solving this great scientific problem. His patent was opposed by Mr. STAITE, and a great number of his claims disallowed; but the points retained were of sufficient importance, apparently, to induce Mr. ALLMAN to meet the costly consequence of sealing his patent; and accordingly, on the 28th September, 1848, he obtained a patent "for certain improvements in apparatus for the production of light from electricity."

It is useless to speculate on the comparative merits of these inventions, until we have them all before the public. The race is not always to the swift. There can be no doubt but that much yet re-

mains to arrive at perfection. From the specification, which was yesterday enrolled, scientific men will be enabled to judge of the value of the inventor's promises on the score of economy, which is the great commercial question involved. On the 20th instant, we advance another step, and discover the ground on which M. LE MOLT professes a superiority over his opponents. We venture to prophecy that, before the 28th March, others will come forward to dispute the laurels of the gentlemen we have named. There is a vast amount of scientific research bearing on this question; and, soon or late, we shall have this glorious source of illumination applicable to all, or some, of the principal uses of oil and gas. We have thought it interesting to place the respective claimants fully before the public. We cannot, however, in the limits of this article, apprise our readers of the many inventions which may be available in this novel application of electro-magnetism. No doubt the proprietors of such patents will be heard of, if they find their rights invaded. We will return to the subject in our next publication, with better hopes of possessing the means of explaining the inventions which the public have already witnessed. It must be borne in mind, that the light which was exhibited at Charing-cross, was that of Messrs. STAITE; and that shown from the Duke of York's Monument was M. LE MOLT's. We make this suggestion, as, in some of the journals, they have been reciprocally confounded. Mr. ALLMAN has not yet exhibited his light; nor have we the slightest clue to the points in which it differs from the others. We understand that the Brethren of the Trinity House have decided on giving the respective parties an opportunity of testing their inventions as applicable to lighthouses.

From all the accounts which have been received from the "far west" during the past week, we are led to the conclusion that the Californian gold-seeking mania gives not the slightest appearance of abatement; but, on the contrary, many of the evils to which we called attention, as unavoidably attendant on this tempting, yet delusive, means of acquiring wealth, are already beginning to be severely felt. Bands of half-civilised desperadoes, who have left the ships of all nations, to acquire some of the glittering metal, scour the plains, and make no hesitation in robbing isolated and weaker individuals and parties; and even several murders are stated to have been committed with the utmost coolness. Several of these bands of piratical marauders are said to have taken up their abodes in caves and fastnesses of the mountains, where they are accumulating immense hoards of gold tied up in blankets, and are not at all scrupulous as to the manner in which it is obtained. All law, both civil and military, is at an end; no authority, even in the villages, but that of the strongest, exists; outrages of the most atrocious character are constantly occurring, and the offenders go unpunished. It is impossible to foretell what will be the ultimate result of this sudden development of the representative of wealth; but if something be not done by the Government to parcel out and license the whole territory, and send an army of occupation for the protection of the really industrious and peaceable, it must shortly become a hotbed of anarchy and confusion. Already has the prospect of easy-got wealth attracted vast numbers of restless, idle, and reckless adventurers; and gambling, and all manner of dissolute habits and profusion already prevail. So great, however, is the temptation, that it is feared that, unless the pay was very much increased, it would be impossible to keep any army long together, as it would be broken up by desertion—the dazzling prospects before them inducing the soldiers to go out gold seeking also. It is impossible to convey an idea of the difficulties which are met with in the sea ports; ships cannot unload for want of labourers, even the natives of the Sandwich Isles, the very lowest of labourers, obtain a dollar an hour; clerks and salesmen in the stores get \$2500 per annum, and waiters in the hotels from \$1200 to \$1500, and the Government officers and military men at the different stations in California cannot by any possibility live on the salaries allowed them. From some of the accounts, it appears that the quantity of gold daily gathered is on the increase; while the *New York Herald* informs us that the mania in the States is subsiding, other American journals asserting the contrary; the former says—"The gold excitement is undoubtedly subsiding through the country. Conversations upon this matter are growing less animated, and persons who, a week since, thought or spoke of nothing that was not connected with California, are gradually settling down to their usual occupations. Emigration to the gold region from the United States, as far as we can learn from various sources within our reach, has been as yet exceedingly small—in fact, the number now on their way amounts to nothing. The disadvantages in both sea and land routes are so great, that but a few will hazard their lives and little possessions for that which is at yet an uncertainty. The number of vessels up for the Pacific, at this port, has not been much increased. At Boston, Philadelphia, and Baltimore, we do not hear of any additional movements of interest."

The following is an extract of a letter from Capt. FULSOME, dated from Francisco:—"I have written you at great length as to the gold, and, since the date of that letter, other and richer mines have been discovered. Rich silver mines are known to exist in various parts of the country, but they are not worked. Quicksilver mines are found at innumerable places, and many of them afford the richest ores. The new Almaden Mine, at Santa Clara, gives the richest ore of which we have any accounts. With very imperfect machinery, it yields upwards of 50 per cent.; and the proprietors are now working it, and are preparing to quadruple their force. Iron, copper, lead, tin, sulphur, zinc, platinum, cobalt, &c., are said to be found in abundance, and most of them are known to exist in various sections of the country." An Albany journal states, that splendid imitations of California gold were being manufactured in that city out of brass filings and sand, for the purpose of cheating "the greenhorns from the States, on their first arrival in those diggings." Of the thousands who have been led by these visions of sudden opulence to give up the beaten paths of honest industry for this uncertain fountain of wealth, how few will return with their expectations gratified, and with the same serenity and peace of mind which marked their previous lives; hundreds, overtaken by want, fatigue, and fever, will fall victims to their cupidity, and leave their bones to whiten those auriferous plains which they vainly dreamed would realise to them countless riches. Others, who more fortunate may, by dint of superior strength and great exertion, secure a few thousands, will become changed in character, their minds embued with, and degraded by, avarice, and unable to return, with credit and success, to the routine of industrial and social life; while the majority who have left far-distant homes will find, from the enormous prices of the absolute necessities of life, and the dangers with which they are surrounded, that but little hope exists of their ever reaching their native soil much richer than they set out. So it has ever been under the frantic excitement of mining for the precious metals. Who does not remember the year 1824, when the Brazils, Mexico, and Columbia, were to fill men's pockets with gold, in return for merely the trouble of picking it from the soil? In the following year, Anglo-Mexican shares, 10s. paid, sold for 168s.; Brazilian, 10s. paid, 70s.; Columbian, 10s. paid, 82s.; United Mexican, 10s. paid, 155s.; and Real del Monte, 70s. paid, 1350s. But now how changed! the majority of these shares are at an enormous discount, and those of the Anglo-Mexican and Real del Monte Companies may be purchased at 5s. per share. The United Mexican alone has made something like a return for the capital expended, having paid off the borrowed capital and dividends since, equal to 1s. per share per annum, and one of 7s. 6d. per share, advertised for payment on 1st February next; the price, as will be seen in our share

list, is now from 3½ to 4. What a contrast does this gold and silver mania present to the mineral progress of such a country as England; by her coal, her iron, and her steam manufacturing power, she converts the mineral and vegetable products of our own, and all the countries of the world, into the glittering metal, for which men leave their hearths and homes, and peril life and happiness in its attainment. In little more than 20 years, the exports of our manufactured goods have increased from 38,000,000 to 68,000,000 lbs., and if ever there was a realised idea of the philosopher's stone, England has it in her own intrinsic and natural wealth, by which she turns every article of her produce into gold. In the present wild excitement after the golden sands of California similar results will obtain; the majority of the auriferous produce will find its way into the pockets of the wary merchant, who wisely loads his craft with the necessities of life, and wending his way to the coast of that country, obtains 2000 or 3000 per cent. profit, by disposing of those goods for the use of the improvident and reckless gold-finders. The time must, however, come when either this immense supply of gold will cease, or the Government take steps for establishing order, and securing the profits resulting from the gold obtained to the State; and we would caution our countrymen, who may have the slightest means of a livelihood here, to pause well before they give up the comforts of an English home for privations, sickness, and, perhaps, premature death, in the untrod deserts of Western America, where the hopes and expectations of thousands will terminate in bitter disappointment.

[FROM A CORRESPONDENT.]

At the commencement of a year, with the cheering prospect of reviving confidence, with an abundance of money, and the gratifying signs of the return of a prosperous commerce, we would take an early opportunity of doing all in our power to caution the public from being led into any wild mania, but particularly one for gold digging in California. It seems to us somewhat singular that JOHN BULL should be so ready at times to develop the resources of foreign countries in preference to those of his own, before, too, he can have any definite idea of the particular object into which, in the former, he is tempted to embark. Already have half-a-dozen gold mining companies been announced in London, to convey British capital to America, where, undoubtedly, it will be spent for the sole benefit of a few persons, who will have the prudence and foresight to profit by the speculative propensities of the million. There are numerous modes of investing capital in the mining districts of England, which, while it would be more patriotic, would most assuredly be far more safe, and, we need hardly say, be much more likely to yield a profitable return. We thought that the public had, long ere this, learnt by bitter experience, that gold mining was by no means a satisfactory speculation—so much so, that it had become a proverb that, if a man discovered a gold mine, he was considered ruined; while, if it were a tin or a copper mine, he had a fair chance of making a fortune.

If the bent of the public mind be towards mining investments, we recommend that application be made to some respectable city mine agent, and if any one be especially desirous to become a "gold hunter," he may soon have an opportunity nearer home. We mentioned last week, and several times before, the existence of that precious metal in Wales, where it is found in connection with lead ore, near Dolgelly, and from which we have seen several bars, or ingots, of considerable value—the results of the operations of the enterprising owner, who has invested a large fortune in the property; although we cannot, of course, state what might have been the cost in obtaining them. When it is clearly established that California contains extensive alluvial deposits, requiring much labour and capital to obtain a profit, it will be time enough to offer the joint aid of enterprising English capitalists. Private parties may, in the meantime, do some good; but, in the present state of the matter, while the gold is discovered in particles on the surface, we cannot anticipate that a public company will eventually succeed: such a step is certainly premature.

The safest mode of turning the circumstance to account, would appear to be, the supplying of provisions and digging utensils, in exchange for gold-dust, to the immense multitude which are reported to have found their way to "the land of wealth and promise." But even this is likely to be soon overdone. The correspondent of one of our contemporaries thus writes:—"Flour is \$50 a barrel; wages from \$10 to \$30 a day; clothing enormous; house-shelter not to be had; sickness and death from exposure quite common. Such is the condition of affairs at present, or rather such it was at the latest dates, but all this will soon be altered; for, within a few months, the markets of California will be glutted—goods of all kinds will be too cheap to pay exporters, and houses will be numerous, seeing that ready-formed wooden tenements complete, all but putting together, are favourite articles of export from New York and Philadelphia." But the difficulties of reaching California are very great; and those who attempt to go by even the shortest route—namely, by Chagres—unless they have ample means at command to take advantage of all the best means of conveyance, and other circumstances, must be exposed to extreme suffering. To the wealthy there is no difficulty, or danger, in the journey. It is not such, however, who will leave Old England to go gold seeking in California.

The difficulty by this route will be chiefly experienced at Panama, where there will not, cannot be, for many months, vessels enough to convey the vast number of eager emigrants so soon expected there to assemble. "Unless," adds a writer at Philadelphia, "such adventurers are abundantly supplied with money, they will not be able to live in the hot desolations of the tropics, where life is but little valued, and where death is even less regarded; and they will not be able to go on, because they will not have means, and even if they had, there will not be ships enough to carry them. At our last accounts, 2000 persons were at that place waiting a conveyance—a prey to pestilence, and to the 'hope deferred that maketh the heart sick.' The bones of many will whiten the sands of Panama." The gold region is from 80 to 110 miles north-east from San Francisco, in N. lat. 39°, W. long. 122° 30', along the banks of the Rio de las Plumas and Sacramento Rivers; but it is believed, and, indeed, partially known, that these gold washings are from the lofty Sierra Nevada and the "Coast Range" of mountains, which extend for 600 or 800 miles, and having the same geological features in their entire length, it is probable that the golden sands, lumps, scales, and debris, may be found, more or less richly, over the valleys and plains in the whole distance, and from within 22 or 23 miles, or more, in breadth. The entire route from Philadelphia by sea (round Cape Horn) is little short of 17,000 miles, with a voyage of five months, and yet this route is considered cheaper, safer, and, in the end, probably, quite as short as *via* Panama. But the reasons and difficulties we have mentioned are not the only ones which induce us to caution the public from embarking at present in any joint-stock enterprise for mining in California. We fear that there will be some dispute about the possession of the territory, while the United States Government will be extremely jealous in allowing foreigners to reap any benefit that they can in any way secure to themselves. It is already stated, that "the Government had decided upon immediately sending several ships of war, to enforce an embargo on all merchant vessels entering the harbour of San Francisco, and the other ports on the coast of California, requiring from them a bond not to receive on board for transportation any part or parcel of gold ore dug from the public lands, or mines, of Sacramento, or other places of the gold region of Alto California. This decision has been come to, doubtless, for the pur-

pose of preventing European vessels, as well as those of South America, from shipping quantities of gold ore, to be coined in foreign mints, without paying the rightful tax, or per centage, to the Government of the United States." And another correspondent remarks, that "the worst feature at present is, that the Mormons—several thousand strong, and about 1000 fighting men—claim the whole region! There will, then, be conflict and war." These facts ought to make British capitalists pause for a while; if matters are really what they are represented to be, they will, by-and-by, have an opportunity, when their position will be better understood. We do not doubt that much gold is found in the country alluded to, but we do question whether it is in such abundance as is stated. "It is not all gold that glitters," is a proverb we would wish to be borne in mind. A letter, signed "E. N. KENT, chemist," appears in the *New York Sun*, in which the writer states, that he had analysed a quantity of gold dust, and that the flakes, or scales, were an "excellent quality of native gold, almost pure, but that some of the lumps resembled arseniate of copper, and contained no gold at all." He thinks that the region does contain gold, but that there is much grain, &c., resembling gold, and entirely worthless.

We have been led to make these remarks, as already mentioned, from the fact of several joint-stock companies being projected for trading and mining in California. It is not the individual losses which these speculations would, in all probability, entail that principally induces us to offer early advice in the matter, but because the money which, we believe, would be squandered abroad through them would be an actual loss to the country. Capital invested in home adventures, however unsuccessful, has this advantage, that it only passes into other hands at home, and is employed in other channels, and does not affect materially the general prosperity.

[These remarks were unavoidably omitted in our last Journal.]

SUBMARINE TELEGRAPHIC COMMUNICATION WITH FRANCE.

The interesting, and, indeed, highly important question, as to the practicability of carrying electric lines of communication over great widths of sea channel, may, we think, be considered as decided in the affirmative, from the experiments conducted at Folkestone, on Wednesday last, under the direction of Mr. Walker, superintendent of the telegraphic system of the South-Eastern Company. These experiments were undertaken with a view to test the possibility of establishing an electro-telegraphic communication with France, by a wire carried over the depths of the Straits of Dover; and it was intended to have taken the wire two miles out to sea, on board the *Princess Clementine* steamer (one of the company's ships), uncoiling and dropping it in the water as she proceeded. The night previous, however, had given token of breezy weather, and on the morning of Wednesday the wind was high; and the waters of the Channel being agitated by a considerable swell, it was feared the vessel would roll and toss to such an extent, as to prevent the proper management of the instruments, or keep the needles in their necessary vertical position. It was, therefore, decided on to pay out 3600 ft. of insulated wire along the mouth of the harbour and the side of the pier—one end being connected with the telegraphic arrangements at the Folkestone station, thus being in direct communication with London, and the other attached to an instrument on board the *Clementine*, at anchor in the harbour. All the arrangements having been completed by half-past 12 o'clock, a message was sent to Mr. Macgregor, the chairman of the South-Eastern Company, in London, to apprise him that all was in readiness, after which a continuous correspondence was kept up between the *Clementine* and the stations of London, Ashford, Tonbridge, and Folkestone.

The experiments were, in every respect, highly successful; the two miles of wire in the sea forming apparently not the slightest impediment to the perfect and free transit of the galvanic current, and all who witnessed the operations went away perfectly satisfied of the complete solution of the problem of carrying telegraphic communication across any reasonable distance of sea division between two countries. There were present Sir H. Douglas, Col. Tylden, and other officers of the Royal Engineers, from Dover, Mr. Remshaw one of the directors of the South-Eastern Company, Mr. Hatcher, secretary of the Electric Telegraph Company, and many other scientific gentlemen.

The wire employed was not made expressly for the occasion, but had been constructed, under the direction of Mr. Walker, for the Marston Tunnel, where it was found that not only the damp on the wires affected the galvanic current, but was still further interrupted by the steam from the engines, impregnated with acid and earthy matters. Its size is No. 16 copper wire, covered to a thickness of about $\frac{1}{16}$ in. diameter with gutta percha, under a patent by Mr. Foster, of the gutta percha manufactory, Streatham, and similar wires will in future be employed in all the tunnels on the lines, which places have been found to cause the only obstructions to the free working of the system. Several specimens of wire were produced better calculated for 30 miles of sea communication—Nos. 8 and 14 galvanised iron wire, a three-twisted No. 16 copper wire, coated much more thickly with gutta percha than the one employed in the experiments, some of them being covered to $\frac{1}{4}$ inch in diameter. It is probable it will be found necessary to cover even the gutta percha with some still further protective matter, to preserve it from the action of the sea; this substance is found by experience to become exceedingly dry and crade after a few weeks exposure to the atmosphere, and we have seen a specimen which, after being kept in a drawer 6 or 7 weeks, had apparently lost all its moisture and flexible and ductile properties, and was dry and rotten as touchwood, exposing the inclosed wire, and completely destroying the insulation. How it will last under water, particularly that of the sea, experience must show; it appears to us that caoutchouc would prove the best insulation for telegraph wires under all circumstances.

The telegraphic instrument employed was one constructed by Mr. Walker, on a plan to avoid any action from atmospheric electricity. The galvanic coils are mounted on wheels, and the needle is brought to a perpendicular with the greatest facility by turning a stud, which causes the coil to pass in a direction opposite to that to which the needles had been deflected. The conductor for the atmospheric electricity consists of a vertical wire, furnished with radiating points, and a bobbin of wire, of a much finer texture than any other in the instrument. This is surrounded by a small brass cylinder, connected with the earth, and any overcharge of electricity burns the fine wire and escapes. This occurred on one instance at Tunbridge Wells, during a thunderstorm, a short time since. At four o'clock the submerged wire was drawn in and coiled up, and was found not to have sustained the slightest injury; and Mr. Foster is so confident of the complete and lasting insulation of his covered wire, that he offers to find the gutta percha necessary for coating 80 miles of wire, whenever the company decide to carry out the communication. To guard against the obstruction of the communication when once effected, by the dragging of ships' anchors, injury to the wire from large fish, &c., Mr. Foster proposes not to depend on one line, but to lay three or four, in different directions, across the straits, when, in case of damage to one, the connection would still be complete, and, by one of the company's numerous fleet of steamers, the fracture could be soon ascertained, and easily repaired. When we consider the great importance of uniting the two greatest capitals in Europe in instantaneous communication, without, in the slightest degree, compromising ourselves, or lessening our national security, these experiments may be looked upon as of the highest interest to all Europe, as the connection would probably, in the event of complete success, be carried out to the capitals of all the other continental states.

IRISH MANUFACTURES.—ORNAMENTAL CAST-IRON WINDOWS.—The Messrs. McAdam, of Soho Foundry, Belfast, have recently completed a number of ornamental windows for the new palace of the Pacha of Egypt: they are of cast-iron, and of very large dimensions, being 20 feet high and 8 feet wide—each window weighing 5 tons. They are to be bronzed and gilt after being erected. The same firm have also erected on the banks of the Nile, for the Egyptian Government, a number of very large steam pumping engines, to raise the water of the river for the purpose of irrigation. These facts are extremely interesting, and it is not a little remarkable to find a manufacturer in the extreme north of Ireland (the poorest country in Europe), ministering to the luxury of an Eastern prince, and raising, on the borders of the historic Nile, gigantic structures more useful than all her pyramids and obelisks. Belfast was one of the places visited by Ibrahim Pacha during his sojourn in these countries: it is the head-quarters of the Irish linen trade, and is a busy prosperous town, forming a remarkable exception to the rest of Ireland.

RAILWAY ASSESSMENTS.—The Recorder of Canterbury has resented the rating case of the South-Eastern Railway, in the parish of Canterbury, on an understanding that the company shall, in the meantime, pay half the amount of future rates, until a final decision of their appeals; the parish is to allow the company any sums that may be paid in excess. The London and North-Western have succeeded in reducing their rates, in the Warwickshire district, from 1600L to 500L per mile, and in another from 800L to 400L. These reductions are supposed to be the result of an inquiry that has been lately going on under the auspices of the Poor Law Commissioners, and from a conviction that these assessments have hitherto been too great.

GREAT NORTH OF ENGLAND.—At a meeting of the directors, held at Darlington, it was resolved, in pursuance of a resolution of the joint committee of the directors of the York, Newcastle, and Berwick, and of the Great North of England, to make a further call of 10L per share on the 40L shares.

PRODUCE OF THE PRINCIPAL CORNISH COPPER MINES,

FOR THE QUARTER ENDED DEC. 31, 1843.

Mines.	No. Tickets.	Tons.	Amount.
Devon Great Consols	3	4432	£3980 13 6
Carn Brea	3	2564	17769 17 6
Par Consols	3	1990	12963 4 0
United Mines	3	2153	11400 14 0
Fowey Consols	3	1455	1945 17 0
Consolidated Mines	2	1495	7510 9 0
Wheal Seton	3	1818	7193 1 6
North Pool	3	1679	6888 19 0
West Caradon	3	846	6225 10 0
East Wh. Crofty, Dudnace, & Longel.	2	1154	5108 12 0
Wheal Friendship	3	671	4895 16 0
South Wheal Frieson	3	445	4489 5 0
North Breakear	1	1000	4470 0 0
South Caradon	3	679	4179 14 0
Stray Park and Camborne Vein	2	1002	4124 1 6
Tywarthayle and Nancekuke	2	939	3330 14 6
Levant	3	823	3226 4 0
Tresavean	3	824	3017 19 0
Tinctor Consols	3	894	2979 2 0
Conduvor	3	542	2386 7 6
South Wheal Bassett	2	365	2228 19 0
Treviseley and Barrier	1	361	1983 15 0
Wheal Bassett	1	316	1584 16 0
Dolcoath	2	327	1482 17 0
East Pool	2	425	1437 5 0
Redgiff United	3	309	1436 6 6
Wheal Comfort	3	636	1418 8 0
Wheal Agar	3	379	1385 3 0
Wellington Mines	2	144	1336 3 6
Wheal Mary Consols	1	264	1292 2 6
West Wheal Seton	2	236	1245 2 0
Marke Valley	2	350	1034 5 6
Trevellick Consols	2	303	1030 12 6
South Breakear	1	188	911 7 0
Wheal Tremayne	3	321	861 8 0
Wheal Mary	2	142	792 15 0
South Wheal Tolgus	1	173	789 7 6
Wheal Bucketts	3	309	765 1 0
Wheal Trevellick	2	164	694 0 0
Wheal Pink	2	126	598 19 0
Wheal Henry	1	110	578 1 0
Foldice	1	136	576 10 0
Wheal Ellen	1	96	554 8 0
Trevellick	1	173	542 13 6
South Wheal Fortune	2	99	524 16 0
Charlestown United	1	99	513 0 0
Perran St. George	1	99	497 2 0
Grambler and St. Apfyn	1	93	413 13 6
West Wheal Jewel	2	125	388 7 6
West Fowey Consols	1	70	378 0 0
Great Work	1	37	329 14 0
Holmbush	2	38	246 2 0
Alfred Consols	1	38	242 0 0
Wheal Penhale	1	33	227 14 0
West Wheal Providence	1	23	175 7 6
Andrew and Mangies	1	37	170 6 0
Gonnamena	1	20	148 4 0
West Trevellick	2	50	138 12 0
Wheal Vynny	1	24	126 18 0
Wheal Busy	1	49	103 19 0
East Downs	2	24	99 12 0
Wheal Malden	1	20	82 0 0
Wheal Brewer	2	47	78 4 0
Wheal Jewel	1	17	76 4 6
Wheal Prosper	1	28	70 0 0
Wheal Williams	1	20	70 0 0
Wheal Harriet	1	20	70 0 0
North Downs	2	18	69 7 0
Wheal Union	1	9	59 12 6
Wheal Venture	1	8	58 6 0
Ting-Tang	1	34	57 12 0
Wheal Virgin	1	18	52 4 0
Gwinear Consols	1	6	41 17 0
Cook's Kitchen	1	12	29 8 0
Providence Mines	1	8	22 4 0
Trenoweth	1	6	20 17 0
Wheal Speed	1	4	19 2 0
Wheal Unity Wood	1	4	18 0 0
Wheal Jape	1	8	18 0 0
Owen Vein	1	4	18 2 0
Lanarth	1	5	15 15 0
Wheal Hope	1	3	6 0 0
Total		Tons 35,972	£176,833 0 6

SADLER'S PATENT BALANCE BRIDGE.—In the *Mining Journal* of the 19th August last, we gave a short notice of a bridge, on an entirely new construction, the invention of Mr. Sadler, of Leeds, a model of which we had then inspected. A larger model is now, we understand, being exhibited at Shott's Iron-Foundry, St. Enoch's-square, Glasgow. The idea of the principle of this bridge occurred to the patentee immediately after the fatal fall of the Chester and Holyhead Railway Bridge over the Dee; it occurred to him that, as cast-iron arch-girders, above a certain span, contained so much metal that they could not safely carry more than their own weight, it would be a great improvement to cast them in the form of two half-arches, the centre resting on a pier; this plan he has carried out in the model in question. The ends of the castings, which when fixed form the centre or key of the arch, are furnished with a series of teeth, or projections, similar to a cog-wheel, and which, when brought together, fit truly into each other; a plate of iron is then fixed over the joint, and the two ends bolted up securely together. By this arrangement, whatever deflection there may be on one end of any one of these levers, from the superincumbent weight, it is distributed, by the action of these balance-girders, to the next arch on each side, and by them to the next, and so on throughout the length of the bridge, the whole forming a set of compound levers; and while the weight of a train is bearing directly on any one of the arches, a portion of that weight is sent, in a wavy manner, to every part of the structure; and when, with long trains, the weight rests on several arches, the whole is beautifully regulated and equalised throughout the entire structure. The principle has been examined by several engineers of extensive railway practice, and pronounced faultless, and to be most perfectly adapted to the purposes of railway bridges and viaducts.

RAILWAY ACTS.—It appears, from a return just issued of Railway Acts, passed in the sessions of 1844, 1845, 1846, and 1847, that the sums authorised to be raised by capital and loan in 1844, amounted to 17,870,861L for the construction of 822 miles of railway; in the session of 1845 to 60,824,048L for 2694 miles of railway; in the session of 1846 to 132,096,224L for 4593 miles of railway; and in 1847 to 40,397,395L for 1353 miles of railway—making a total of 251,188,068L, and of 9463 miles of railway. On the 31st of March, 1848, it states that 1761 miles of the latter were open for traffic, leaving 7702 miles to be completed. The capital called up for railway purposes from the commencement of 1844 to the 31st of March, 1848, amounted to 101,236,309L, of which the sum of 90,900,319L was paid by shareholders—leaving 10,686,010L due, and 98,281,624L to be called up. The companies borrowed during that period, 26,933,865L; reserving power to borrow, 42,987,288L more—so that the actual amount received on calls and loans, in the course of four years and three months, for the construction of railways, amounted to 117,534,184L—being an average of 27,655,000L per annum. The amount received on railway calls, prior to the year 1844, was 41,310,049L—leaving 601,996L in arrear; and the amount borrowed, 6,910,822L—making the total amount received up to that period, 48,220,871L; and the grand total up to the 31st of March, 1848, 165,754,655L.

"GREASED LIGHTNING."—The *Boston Post* says that two young Pennsylvanians, now in Boston, have invented a locomotive by which a vehicle is propelled at the rate of 200 or 300 miles per hour. Ice and snow are no impediments to its operation. The *Post* says it is precluded from revealing the method, but half endorses it, saying the inventors are not visionaries, but the authors of at least one very useful invention.—*American Paper.*

SOUTH DEVON RAILWAY COMPANY.—A special meeting of shareholders was held on Saturday last, at Exeter—T. WOOLCOMBE, Esq. (chairman of the company), presiding, for the purpose of taking into consideration the present state of the company's affairs, and the advisability, or otherwise, of entirely abandoning the atmospheric system.—Mr. J. CHURCH proposed the appointment of a committee of shareholders to inquire into the affairs of the company, in pursuance of the regulation, and that all the books and documents of the company be opened to them, and that they have power to call in professional assistance, and the expenses to be borne by the company. The committee to report at an adjournment of this meeting at the ordinary half-yearly meeting in February. He would not advocate one farthing more to be spent on the atmospheric system, but he would not shut out the proposition of any person to continue the experiment at his own risk of failure.—Mr. Fox seconded the motion, and after a lengthened conversation Mr. F. WY, of Bristol, moved as an amendment.—That the suspension of the atmospheric system on the 6th of September last was a prudent and necessary step—that nothing has since occurred to justify its resumption. That, inasmuch as no offer has been made to perfect the system at the risk of other parties, prompt measures should be taken to realise for the company the utmost value of their atmospheric property; and, finally, that the immediate and earnest attention of the board should be directed to the best means of reducing the charge for locomotive working to the greatest extent which circumstances may permit. A very animated and long discussion ensued, in the course of which Mr. GILL fully explained his views, as laid down in the pamphlet published by him, and called attention to the offer of Messrs. Clarke and Verrill, some remarks on which system will be found in another column; he defended his proceedings while in the direction, and on a show of hands, the chairman declared the original resolution carried. Mr. Fry demanded a poll, which did not terminate until 8 o'clock in the evening, when there appeared for the original motion 1875, for the amendment 5900; giving a majority for the total abandonment of the atmospheric principle, 4025.

PORTER'S CORRUGATED IRON BEAM.

In the *Mining Journal*, page 462 of last volume, we gave the specification of patent granted to Mr. J. H. Porter, for making beams and girders of corrugated iron, and we have now the pleasure of laying before our readers the account of an experiment tried upon two beams made on this plan, of the extreme length of 22 ft.; between supports, 20 ft. 6 in.; depth of beam, 18 in.; weight of beam, 8½ cwt.; the top and bottom frames were of 4 in. x 4 in. T-iron, and the base ½ in. thick; the plates of corrugated iron forming the beam being of No. 16 gauge, and the bands 1½ in. x 1 in. thick. The two beams were placed 9 ft. apart, and across these were laid two large oak blocks, weighing 1 ton 3 cwt., and supporting the further load. These blocks, or bearers (the one 19 in. and the other 24 in. wide), were 4 ft. 3 in. apart from centre to centre, and equidistant from their centres to the centre of the beam, 25½ in.; upon these were laid cast-iron blocks, weighing 6 tons 17 cwt. This weight was put on on Saturday last, and remained till Tuesday, without causing any deflection. On Tuesday, in the course of an hour-and-a-half, an additional load was applied of 121 bundles plate-iron, weighing 7 tons 3 cwt. 0 qr. 16 lbs., producing a deflection of ½ in. This load was allowed to remain from 1 p.m. on Tuesday until 10 a.m. on Wednesday, in course of which time the deflection had increased ½ in. Fifty-one bundles of plate-iron, weighing 3 tons 9 cwt. 1 qr. 2 lbs., were now added, which caused a total deflection of 1 in. bare; rested a quarter of an hour, when 32 bundles of plate-iron, weighing 1 ton 18 cwt. 0 qr. 12 lbs. were added, which increased the deflections to 1½ in. and 1¾ in. respectively; the difference being evidently occasioned by the settling down of the piers, giving a greater load to one beam. A further load, weighing 2 tons 8 cwt. 3 qrs., brought the deflections to 1½ in. and 1¾ in. This loading was proceeded with gradually during three hours, when the load was left for an hour. In the meantime a slight noise called attention to a partial dividing of the bottom flange of T-iron, in the beam which hitherto appeared the least strained; upon examination, it was found to have originated in a flaw near a "shut" in the T-iron, distant 6 ft. 3 in. from the point of support—this caused a further deflection of ¼ in., but the fracture did not appear to increase during half-an-hour. The deflection of the beams increased to 2 in. and 1½ in., with an additional load of 2 tons 6 cwt. 2 qrs. 22 lbs., load applied gradually during three-quarters of an hour. After a further lapse of 10 minutes, a further load of 7 cwt. caused a rapid deflection in the already-weakened beam, the corrugated iron giving way at the same time to the strain of the rivets longitudinally. The beams were now blocked up to prevent any accident from the sudden falling of the load. The corrugated iron of the other beam was also found to have yielded in several places to the longitudinal strain of the rivets, principally in the lower part of the beam, from which it appears that they would have fairly broken by tension. The breaking weight being taken at about 25 tons, or, including weight of beams, at 26 tons. A model beam, to a scale of 1¼" to the foot, weighing 3½ lbs. for the 22 ft., and with a bearing of 20 ft., or 30 in., and a depth of 1' 6", or 2¼", bore 112 lbs. suspended from its centre without deflecting. Now this is equal to (112 x 512) 25 tons 12 cwt., or to a load of 51 tons 4 cwt. distributed over the beam, which only weighed (8½ x 512) 14 cwt. 3 qrs. 12 lbs. We have no doubt but this would hold good with a full-sized beam.

MACHINERY FOR LOWERING AND RAISING MINERS.

Having received several applications, requesting a description of the machinery employed at Tresavean Mine, and as, with the increasing depth of many of our Cornish mines, and the corresponding additional fatigue and injury to the men, it becomes a question of much importance whether many other established paying mines might not adopt them with advantage, we give a description of a modification of the simple but effective machinery which has for many years been employed in the deep mines of the Hartz, in Germany, and which we believe is similar to that erected at the Tresavean Mine, from the plans of Mr. E. O. Tegelles, C.E., and is applicable to a shaft 200 fms. deep. It consists of two rods of fir, proposed to be constructed of two pieces in width, of Norway timber, scarfed together to break joint, so as to form one continuous length, 16 in. by 9 in. Brackets, or foot-boards, are fixed at every 10 ft., and a rod, 2½ in. square, for the men to lean against, is fixed at the outer angle of the foot-board, and continued from top to bottom of the rods. Staples of wrought-iron are fixed at certain heights above the standing brackets, and are sufficiently long to suit either men or boys, as holdfasts. The crank connecting these rods with the steam-engine is 5 ft. between the centres, and, by the connection with a cross-beam, they are given an alternate up and down motion. Now, it is obvious that if this crank makes five revolutions per minute, it will raise and lower each of the rods five times per minute; so that, at each change of stroke, a short interval of time will occur, during which the standing brackets are nearly on a level with each other. This interval, supposing a party descending, will afford sufficient time for a man to step on to the descending bracket, and this he does at every stroke of the crank alternately from each rod to the other, going down 10 ft. at each stroke, or 200 fms. in 12 minutes, without fatigue.

The estimate for the construction of a machine for a shaft 200 fms. deep, with engine and all works complete, is under 2500L. The quantity of fuel required to raise and lower one man this depth is 1-75th of a bushel, or ¾d. per man per day; and the general expenses, including wear and tear, and every cost, may be estimated at 20s. per day; or, supposing 240 at work, the average would be 1d. per man per day, making a total of 13d. per man per day. This trifling expense would, in every case, be much more than covered by the longer time the men would have to work, and the much greater strength they would possess to immediately commence on reaching their level—as, by the usual mode of descending by ladders, it takes an hour to reach 200 fms., and then the men are in such a state of prostration, as to require much rest before commencing work. The saving in time alone on 10,000 men would be 39,000L. per annum.

NEATH ABBEY IRON-WORKS.—This old established and highly respectable company, who have been so long noted for their superior colliery, marine, and other engines, as well as for their iron ships, have recently added the making of locomotive engines to their other manufactures. A splendid locomotive, with 15-in. cylinders, called the *Neath Abbey*, was lately delivered on the Taff Vale Railway; and, we understand, four other engines, made to order, are now nearly ready. This is a new and important addition to the manufactures of the principality, and we trust it will be an increasing and successful source of employment for the artisans of South Wales, and for the consumption of its mineral productions.

PONTFRIDD.—Mr. John Calvert has commenced preparations for his projected great colliery at Gyffellion. The first turf was removed by Mr. George Calvert, son of the worthy proprietor, amid the joyous cheering of the large numbers who were assembled. This colliery will be a most extensive one, and when completed, will furnish a plentiful supply of excellent coal—equal, at least, in quality to that yielded by any colliery in the county. We cannot speak too highly of the manner in which the proceedings connected with Mr. Calvert's works are conducted.—*Merthyr Guardian.*

ROYLE'S PATENT FOR GAS AND OTHER IRON TUBING.—In the Sheriff's Court, Stafford, an important case came before W. B. Hand, Esq., being a writ of inquiry to assess the damages to be paid by Mr. John Dixon, of the Mount Pleasant Works, Wolverhampton, for alleged breach of agreement as to the manufacture of certain gas and other tubes, the plaintiff being Mr. Royle, late superintendent of those works, and the inventor of the patent. The contract came before the Court of Queen's Bench a few weeks ago, upon a demurrer raised by the defendant to the plaintiff's declaration, when the Court overruled the demurrer, the effect of which was that the statements contained in the declaration were admitted to be true; and the question of damages remained for the determination of jury. The inquiry lasted about nine hours, and from the voluminous nature of the proceedings, it would be impossible to give a fair abstract of the evidence on both sides; but at the close, and after a careful summing up by the Under-Sheriff, the jury gave a verdict in favour of the plaintiff, damages 1000L, the sum named in the original contract, in case of breach of agreement on either part.—*Birmingham Journal.*

COAL MASTERS' MEETING.—The coal masters of South Staffordshire held a meeting on Wednesday week, at the Talbot Hotel, Stourbridge, George Bate, Esq., in the chair, when it was agreed that the prices of coal and slack should continue as at present.

COAL TRADE.—The following is the number of ships entered by the several factors at the Coal Exchange, London, in 1848:—Messrs. Duke and Hill, 2273 ships; Messrs. Harris and Dixon, 1118 ditto; Messrs. Charleton and Watson, 859; Messrs. Miller and Potter, 705; Messrs. Hugh Taylor and Co., 696; Messrs. William Metcalf and Co., 638; Messrs. Lambert, Ridley, and Co., 538; Messrs. Fenwick and Co., 484; Messrs. Smith, Scurfield, and Co., 464; Messrs. Carr, Lamb, and Co., 417; Messrs. G. H. and J. T. Wawn, 356; Messrs. A. Harris and Co., 336; William Milnes, 236; W. E. Bell, 180; S. Clarke, 133; George Marshall, 102.—*Newcastle Journal.*

Original Correspondence.

ON THE SEPARATION OF LEAD FROM ANTIMONY, &c.

Sir,—Large quantities of lead containing antimony occur in commerce, which are sold far below the prices which the lead or antimony separately would bring, as for many purposes the alloy is not applicable, as for white lead, letter types, &c. The following process (which I have verified on the small scale) will answer where muriatic acid may be had in sufficient quantities, and when the metals are in the state of oxides. It may be even profitable to oxidise such alloys in reverberatory furnaces. The finely ground mixture (?) of oxides is placed with commercial muriatic acid in a wooden tub, into which steam is introduced through the bottom, for the purpose of heating and stirring the mixture. The quantity of muriatic acid depending much on the strength of it, may easily be found by experiment, but a little excess is advantageous. When the combination of the muriatic acid with the oxides is effected, and when the mixture is perfectly decomposed, it is allowed to cool, whereby the chloride of lead crystallises out, but the chlorides of antimony, copper, iron, &c., remain in solution. The liquid is drawn off, and the crystals washed with a little cold water. The tub containing the crystals of the chloride of lead is again filled with water, heated with steam and common limestone, introduced in pieces, and the application of steam continued until the disengagement of gas (carbonic acid) ceases. The tub contains now carbonate of lead, with some chloride of lead, which falls to the bottom, and which may yet contain some pieces of limestone, and the liquid contains muriate of lime, which can be entirely washed out from the precipitate, which, when reduced, will give a lead of great purity, or may be used as an inferior white lead. The liquid drawn off from the chloride of lead, containing the chlorides of antimony, iron, &c., is also precipitated by means of limestone and steam. The precipitate reduced will give an antimony containing only traces of lead, besides the other impurities.

Newcastle-on-Tyne, Jan. 10.

DAVID ZENNER.

JOINT-STOCK COLLIERY COMPANIES IN SOUTH WALES—No. II.

Sir,—The success of these companies depends on many contingencies, and even in the event of the utmost precaution having been taken in the purchase of the property, or in obtaining a lease, there are other elements of failure to be encountered and overcome. The most prominent of these is the selection of a locality for carrying on the mining operations. Most companies are got up for the specific purpose of working coal in a particular royalty, and this question, therefore, is confined to the simple acceptance or rejection of it. The reasons which ought to influence the decision of the board are such as would equally apply in determining its preference to one royalty over another, had it the choice of selection. Under such circumstances, it is not very probable that "the promoters" of the company will raise the question, nor is it likely that the directors, unassisted by experience, can appreciate its full importance. The subject, therefore, does not generally receive that mature consideration to which it is eminently entitled, at the only time when it is most required. It may be, and usually is, forced on the after-deliberations of the board, when expedients are resorted to in mitigation of the evil consequences; but it rarely happens that the disadvantages thus imprudently entailed are ever afterwards effectually overcome.

It is well known that this extensive coal-field is only very partially supplied with the means of cheap conveyance for its mineral produce to the shipping ports or home market—the existing canals, rail and tramways, communicating with only an inconsiderable portion of the whole district. And although the area benefited by these modes of transit is considerably increased by some of the canal companies having the power to grant leave to any proprietors of mines to construct railways or tram-roads within the distance of eight miles of the said canals, without the necessity of applying to Parliament for that purpose; yet there is still an immense quantity of excellent coal and ironstone inaccessible to prudent enterprise. The completion of the South Wales Railway has been anticipated as a means of increasing the facilities for the conveyance of mineral produce; the advantages likely to accrue from it are, however, somewhat problematical. It may be remembered that, in its route from Newport to Carmarthen, it passes parallel, and within a short distance of the Bristol Channel, crossing the direction of the principal mineral traffic at right angles, near the places of shipment. Some few royalties, on the south crop of the coal basin, may possibly be advantaged by it to a limited extent; but, generally, the means of internal traffic will not be much increased, as far as the minerals are concerned. The wide gauge, too, will tend very considerably to lessen the utility of this railway. The whole of the colliery railways are on a narrow gauge; and as most of the railways are continued from the surface into the adits, or levels, to the places of work in the mine, the adoption of the broad gauge is impracticable. The whole evils of a mixed gauge are, therefore, entailed upon the mineral traffic of South Wales. It will become a question whether it will be better to pay for the carriage of dead weight (in sending the coal in the colliery waggons on railway trucks), or incur the expense of moving the coal from one set of waggons to the other, and the loss resulting from the breakage, and consequent depreciation in the marketable value of the coal. Whichever mode be adopted, it is very clear that the usual benefits accruing from the formation of a public railway will be but sparingly reaped by those concerned in the coal and iron-works of the principality; nor is it probable that the anxiously looked for completion of the South Wales Railway will tend materially to develop the resources, and increase the value of such royalties as are at present without the means of cheap communication with the ports and markets for the disposal of their produce.

In the absence of better means, some parties have sent their coal to market in carts on common, or turnpike roads. Even for a short distance this is an expensive and an injurious mode. If the colliery be more than three or four miles from the port it is suicidal. The expense and breakage are insuperable bars to a successful competition with other coals that are brought by canals, or railways, and the inevitable consequence has been, that the coal has been sold not only without profit, but at considerably less than what it really cost.

If a royalty, therefore, be situated at a distance from the shipping port, and from a canal, or public railway, the only alternatives are either to convey the produce to market on common roads, or to construct a private railway, for the sole use of the company. The first alternative, it has been shown, is generally ruinous, and the second involves very serious considerations; for, supposing that there is no difficulty in raising the large additional capital required for the construction of the railway, it remains to be proved, whether the gross tonnage which is likely to pass on it will be sufficient to pay the interest of the extra capital invested, and the expenses of working and maintaining it. It is always desirable to preserve the fixed expenses of a colliery as low as it is possible; every addition to the capital sunk in the speculation, after the coal is won, increases the risk, and diminishes the probability of a profitable return. There have been instances wherein capital has been expended on the presumption that the produce would be at least 1000 tons of coals per day, whereas the quality realised did not reach 100 tons per day. In such a case, it is clear that the interest of the capital sunk must be charged on the smaller tonnage, and thus increase the cost of the coal in this item to 10 times the amount originally estimated. There is another circumstance which ought to be maturely considered in the projection of a private railway, which is the probability there may be of disposing of it after the collieries are exhausted, or are given up from any other cause; for if this cannot be done, the largest proportion of the capital invested in it will be lost. Railways, therefore, which are made for private and special purposes, are of more questionable expediency than those which are instituted for the passenger and general traffic of a district, inasmuch as the one is of a temporary duration, whilst the other is an investment of capital for perpetuity.

From what has been said, it appears that the choice of a locality for mining operations, at a considerable distance from the market, or a canal, or a public railway, necessarily entails such an expenditure in capital, or yearly outlay, as to negative the supposition of profit being derived from it, and that the only expedients which can be resorted to in alleviation of these disadvantages, tend to increase the risks already incurred. An injudicious decision on this important question must, therefore, be fatal to the success of the company.

In this discussion, the quality of the coal, nature of the mining ground, and other important matters, have been omitted, because, however unexceptionable the royalty may be in these respects, it must be evident that the prosperity of the company mainly depends on the satisfactory solution of the preceding questions. There are other subordinate causes which operate to the same end yet to be noticed, and the combined effect of the whole to be shown in figures, which must be reserved for a future communication.—J. RICHARDSON: Neath, Jan. 8.

WEARDALE IRON ORE.

Sir,—With all submission to Mr. Cargill, I remark that my observations upon that gentleman's former letter were made in support of an opinion which I gave some years ago upon the importance and excellence of the "ryder" for iron-making, and not with any intention to misrepresent Mr. Cargill's statements. My opinion remains unshaken, and founded as it was upon natural facts, and upon simple first principles, it will eventually be proved to have been a correct one. The failure of a trial upon 7000 tons, and a hundred future failures which may occur in treating this ore, will only prove to my mind that, with ores which are not regular and known stones, time and experience will be requisite to develop their intrinsic worth upon the scale of manufacture. Since it is recorded that an emperor became a common shipwright, and performed the duties of that station with credit to himself, it may also, I imagine, be possible that a gentleman should be a miner, and vice versa.

At one time of my life my sole income consisted of the wages paid to me as a working miner, for the daily duties of a working miner performed by me to the satisfaction of my masters. Moreover, as I hold a certificate from the Crown, in which I am recognised as a "miner," I consider that my signature of "Miner" is strictly correct.

I have not, as Mr. Cargill suggests, any the slightest interest in Wear-dale, except that which is expressed in a sincere desire for the prosperity of one of the most amiable and talented individuals in existence, by whom I believe a large portion of these minerals is held.

I have not described myself as a "theoretical experimentalist." I do not understand the phrase. Experiment and theory have been so long at variance, the former generally scattering the latter to the winds, that I congratulate Mr. Cargill upon having at length reconciled these jarring elements. The experiment to which I alluded was made by an individual far better able to judge of the merits of the iron than I can pretend to be. His calculation was, that excellent merchant bars could be manufactured in Wear-dale at 60s. per ton. Now, whilst I admit the great and well-known practical knowledge and experience of Mr. Cargill in the manufacture of iron, I, on the other hand, have a full reliance upon the equally mature opinions of the party by whom this estimate was made, and I think that the only test of superiority—"cheapness"—is fully sustained at a cost for bars of 60s. per ton, to say nothing of their goodness—a quality which indeed, now-a-days, is scarce worthy of notice.

With a fan blast, and with furnaces 8 or 9 ft. diameter at the boshes, and (say) 18 to 20 ft. high, working with 6, 8, or 10 small tuyeres each, 300 tons of pig-iron per week might be readily smelted in each furnace from the richer Wear-dale ironstones. Here again, I think, the test of cheapness might be undergone satisfactorily. So far from being, as Mr. Cargill appears to imagine, a theoretical man only, I, on the contrary, have made practice my aim in all that I have ever attempted to make myself master of. I can work off a heat in a puddling furnace with as good a yield as any puddler in Mr. Cargill's establishment; and, from having had a little practical experience in this way, I know that it is in the power of every puddler, except under the immediate inspection of an experienced master, to bring bad iron out of good metal if he pleases; and, in general, if any extra care or working be required from the nature of the pig or metal puddled, the puddler will always please to produce bad iron. In nine cases out of ten, some extra working at one stage of the process will constitute the difference between red-short and red-tough in the bar-iron produced; and to secure a good quality of bar-iron from the "ryder," I should consider would depend more upon the treatment of the iron in the puddling furnace than upon the manner in which it was smelted from the ore.—A MINER: Jan. 8.

COPPER AND SILVER-LEAD SMELTING.

Sir,—I observe in several Numbers of your Journal, from time to time, various patents for improvements in copper smelting, which profess to reduce the current expenses; but none of them state whether they increase or diminish the produce of the ore, and it is very probable that, in carrying out several of these plans, one shilling may be saved and four perhaps lost. The golden rules of smelting is, to get all the metal from the ore, to keep the expenses as low as possible, and to produce the purest metal possible for the market. If, as stated by Mr. Wyld at the meeting of the new smelting company, the profits of the present smelters are 30 per cent., what immense benefits are within reach of the new company, if they take advantage of the present advanced state of chemical science, and extract all the silver and tin from the ores, which may be done at an inconsiderable expense. I would recommend to all parties interested the perusal of Mr. Prideaux's communications on the importance which he attaches to the development of the several metals in a pure state.

I observe in your last Journal a correspondent, under the signature of "Delta," states that we are immeasurably below our foreign competitors. Now, Sir, this I cannot subscribe to; many mining agents and refiners have been raised from labourers, through their own intrinsic talent and experience, and we have in England a host of superior mine agents and refiners, I should say far superior to foreign competitors. A case in point: in the year 1824, a certain foreign mining company, whose offices were in the Adelphi, engaged a German—a man of theory—to go out as superintendent. He had with him a Cornishman of practical experience, named Rule, but to whose suggestions he would never listen, and the consequence was, that in the course of a few years he expended 200,000*l.* John Rule was called home, when he explained everything to the directors; and the German still calling for more money, they determined on discharging him, and sending out John Rule in his place. The consequence was, by a complete alteration in the mode of operating, he soon had as much work done, and proportionate returns for 10*l.* as had formerly been done for 100*l.*; and yet, notwithstanding this change for the better, an immense loss in lead takes place, from the German process being still carried on for the extraction of the silver.

In the years 1838 to 1840, the discovery of silver-lead mines in Spain, containing often 200 ozs. of silver to the ton of ore, created a great sensation, and English, French, German, and Spanish smelters were soon in the field. Here the superiority of the English over their foreign competitors was strikingly exemplified; for the lead, after smelting by the continentals, often contained from 12 to 20 ozs. of silver per ton of metal; while that refined by the English was generally sent to market with less than 2 ozs. per ton.—SMELTER AND REFINER: Swansea, Jan. 10.

THE ROOTS OF PLANTS.

Sir,—The physiology of the flower is confined to the multiplication and extension of the species, and has little interest for the farmer, though its phenomena are as curious as in other departments of the science. Seed vessels ripen their contents usually in the air, hermetically sealed, while others are singularly ventilated by curious orifices. Some repose in satin compartments, others in cells of cotton, silk, or velvet, others are enclosed in shells, or in innumerable fruits, and there are some imbedded in a kind of liquorice (*Cassia fistula*), and again in a species of gingerbread (baobab and doum palm). The *arachis hypogaea* buries its pods to ripen below ground, while the *valisneria spiralis* employs an elastic coil to pull its seed vessel from the surface of the stream, and mature its seeds at the bottom of the river. The root, however, is the organ of chief interest to the agriculturist. It is composed essentially of two parts, a stem, or tube, and stomata, orifices, or mouths; the latter are very distinct in the case of hyacinth bulbs grown in glasses, the more opaque termini are the stomata of the fibres. By this channel the food of the plant enters, and rises, it may be, in virtue of capillary attraction. Their absorbent character is sufficiently obvious, but that roots are also excretory organs there can be no doubt. I supplied the roots of plants with acetate of lead, &c., and having washed them in distilled water, they were subsequently dipped into a weak solution of bichromate of potassa, when lines of chromate of lead were traced through the body of the plant, on dissection. In the year 1818, I discovered that carbonic acid gas was excreted by the roots of plants, my experiments having been made with hyacinths and other bulbs, grown in distilled water, and excluded from the atmosphere.

The announcement of this remarkable discovery was ridiculed and laughed at; and, among others, Mr. Weigmann, in a scientific journal of Germany, was sufficiently prominent in its denunciation; and yet Weigmann, in conjunction with Poldorf, laid claim, two or three years ago, to this fact as a discovery of their own!—presuming, I suppose, that the real author was dead and forgotten. This secreted carbonic acid was very properly considered by them as the agent by which the silicates of a soil were decomposed, and the silicic acid rendered soluble and available for the plant to build up, for instance, the calm of the cereals; the epidermis of wheat, barley, &c., as well as that of grasses, being composed of finely comminuted silica. I have a very curious specimen of antique glass from St. Cross, near Winchester, emphatically illustrating the fact referred to; one surface was singularly encrusted with a beautiful lichen, and when it

was removed, the surface was discovered to be corroded, wormed, or grooved, in virtue of the secreted carbonic acid, and the appropriation of the silica of the glass. Macaire Prinsap's assumed secretions in reference to roots, as poisonous to some and subservient as food to others, adduced to explain his particular view of the necessity for a rotation of crops, is, so far from being substantiated, entirely disproved, and a more natural inference drawn from the facts referred to—namely, the diversity of food required for different plants, and consequent exhaustion of particular elements in the soil, with the selecting character of the roots in regard to these peculiar requirements. Seeing that roots secrete, beyond all question, carbonic acid gas, there is no necessity, *prima facie*, why the leaves should also do so. I believe that the absorbent and excretory functions of the root are alternating, or reciprocating, like the ebb and flow of the sea. It is quite clear from these facts that the materials presented to the plant must, of necessity, be in a soluble form to be available as food, consequently peralts should be the form in which they are presented, such as superphosphate of lime; while gypsum, being an insoluble sulphate of lime, would remain inert for a considerable period of time. At any rate, I had recommended the farmer, by the affusion of diluted sulphuric acid, to convert his gypsum into a soluble persalt, and he soon found his advantage in carrying the precept into practice.

In a communication I sent to the Royal Agricultural Society of England, I recommended powdered chalk to be mixed with the soil, and raised into ridges, and diluted sulphuric acid to be applied; this would liberate the carbonic acid gas in contact with the silicates of the soil, and thus render them available for the plant, and also provide for it, at the same time, a persulphate of lime. My motto is (you cannot fail to perceive) precisely that of the Royal Agricultural Society of England—"Science with Practice;" and I mean to carry the recommendation into experimental detail. It has all the force of an axiom, and its success is not doubtful. The abuse of guano has marred its legitimate end, not to speak of its malappropriation, and its too frequent adulteration. The question is now being considered in its legitimate bearing, and guano is at length reduced to its proper level. Too much has been expected from it; but nothing can in many cases be a substitute for the manure of the farm-yard, connected as it is with a curious subject, which I have elsewhere called *self manures*, but which I cannot now discuss.

I must conclude my lucubrations with a few remarks on the existence of nitric acid in the atmosphere, and which is the deed of the electric condition of the atmosphere, and the eminent gift of the thunder-storm. These thirty years have I maintained this position. I had inferred its necessity, reasoning from the experiment of the Hon. Henry Cavendish, made in the year 1766. It simply requires a reversal of the gaseous constituents of the atmosphere, and the formation of nitrous acid is complete; and such a change is compatible with the functions of electricity.

More than 20 years ago I announced having clearly discovered nitric acid in the rain water of the thunderstorm, and I had found the change of colour in the tincture of *lignum campechianum*—a sensible test for its presence. I had previously noticed, that the delicate blues of the petals of some flowers were changed to red under such circumstances. I thus enunciated, that the tendency of fermented liquids to acidity in the thunder-storm might be easily explained, as well as the formation of nitrates on damp walls, and the existence of these salts at Tirhoot, in Persia, among the ruins of Babylon, and on the plains of Atacama, in Peru. The prevalence of this product of the storm must needs be greater between the tropics, where thunderstorms are more frequent, and of greater intensity; and, perhaps, the luxuriance of vegetation in intertropical climes may partly, at least, be ascribed to this cause. Certain it is, Decandolle found that a vine grew an inch in one hour during a thunderstorm. My friend, Professor Bojer, of the Mauritius, has clearly proved that the occasional variegations, of the foliage of the sugar-cane are to be ascribed to the nitrous acid—the product of the thunderstorm. Some time ago a dead orchid was sent me from Pará, and, on analysing the aerial roots, I found them highly impregnated with a nitrate: I now perceive the prospective wisdom which so curiously arranged their denudation.

I am entirely sceptical as to the absorption of nitrogen by the leaf when ammonical matters and the nitrates enter by the roots, and nitrogen can be obtained from them. I am aware that Baron Liebig has advocated the existence of ammonia in the atmosphere, but his experiments are not so unequivocal and indeterminate as I could wish them to be. It is quite evident that the co-existence of free nitrous acid and ammonia is incompatible, though I readily admit the more occasional and limited presence of ammonia in the atmosphere, arising from local and accidental circumstances; but this distinguished chemist seems, if I mistake not, now to concede more to my view of the case than formerly, and the simultaneous formation of nitrous acid and ammonia by the electricity of the storm, is a position not easily understood.

J. MURRAY.

Portland-place, Hull, Jan. 5.

MR. STAITE'S ELECTRO LIGHT.

Sir,—I cannot but think that the opinion enunciated by Mr. Pepper, as reported by Mr. De la Haye, is, to say the least of it, premature. The merit of Mr. Staite's invention is twofold, and precisely meets the requirements considered essential by Mr. Pepper to the full efficiency and success of the electro light. To maintain the electrodes in contact was the very problem to be solved, and this consummation has been achieved by a curious self-adjustment, derived from a power emanating within the apparatus itself; all that is mechanical in the case seems to be a simple dead escapement. As to its economy, the doubt is made to hinge on the assumption that zinc is used in the construction of the battery; whereas, if I am not mistaken, Mr. Staite entirely dispenses with zinc in his new battery, being supplanted by iron, &c.

Mr. Staite has surely a right to secure his interests, and to withhold the publicity of the principle until he finds it safe to do so. *Ponderibus librata suis.*—J. MURRAY: Portland-place, Hull, Jan. 8.

AGRICULTURAL CHEMISTRY.

Sir,—I have perused your description of Dr. Ryan's lecture on Agricultural Chemistry, as delivered in the London Polytechnic Institution, which is given more in detail in your pages than appeared in the *Globe* newspaper. I am not disposed to act the part of a censor on the question as propounded by Dr. Ryan, and, therefore, shall principally confine my remarks to the phenomena of agricultural chemistry, in as far as these are confirmed by facts and established by experiment—chiefly limiting my observations to the functions of the leaves and roots of plants, to the establishment of which, in reference, at least, to the last of these I have contributed some facts of importance.

I must confess, however, I have been amused, if not edified, by Dr. Ryan's eccentric notion about *fairy rings*. As far as I know, they are original, but I should doubt if he has ever seen them, or, at any rate, investigated their phenomena. It is quite true, that on barren heaths the iron of the subsoil is often found in the state of a protoxide; and it is also clear that such protoxide is poisonous to plants, as are also salts of iron. The existence of such protoxide in the soil beneath fairy rings is entirely problematical, and I believe illusory. Besides, what curious spell could have disposed the protoxide of iron into such magic rings? I confess I have formed a very different opinion of the phenomena of "fairy rings."

The elements of agricultural chemistry are few and simple. Plants, like animals, are living beings—they must eat to live, and if food is withheld they perish. It is clear that if the pabulum of plants is not in the soil, it must be imparted to it in the shape of manures. Plants, moreover, are of diverse kinds, and require diversities of food, in conformity with their nature, circumstances, and condition; and it has been proved beyond all doubt, that roots have selecting functions, and will appropriate and assimilate the peculiar food the plant requires. Azotised matter must not be withheld from wheat, nor phosphate of lime from the oat. Plants cannot create the materials of their organism—they can only appropriate and assimilate. Plants are organisms, composed of organic matter, dissipated by combustion, *sub die* into gases, and other volatile products; and inorganic by combustion, as earthy materials and metallic oxides, &c. The plant thus composed, when its machinery is in motion, and its functions in a state of activity, is invested with a "vital principle," which controls and subordinates these functions. Chemical affinities are obedient to its power, and obey its spell; and when the "vital principle" is withdrawn, the parts act and react on each other, and, in the process of decay and decomposition, chemistry obtains the mastery, and reigns in the ascendant. The vital principle acts synthetically. The chemistry of the laboratory is to destroy, not build up, as far as organisms are concerned; these, therefore, are antagonistic powers.

This being premised, I shall now venture to view the functions and phenomena of the leaf and then of the root, restricting my remarks to the

question, as far as experiment may warrant my deductions, and no farther. The functions of leaves are mechanical and chemical, therefore composite in character. There are leafless plants, in which case the entire surface, it is probable, acts the part of these appendages. Aëration is the grand purpose to which leaves are subservient; they are respiratory organs, and, therefore, analogous with the lungs of animals and branchiae of fishes. Light acts injuriously on the upper surface of leaves; hence, screened by varnish, or mantled with a tomentum; leaves sometimes secrete acid matter, as in the case of the *cicer arietinum*, where there are several acids secreted. Sometimes the excretion is saccharine, as in the lime, &c.; and at other times pure water exudes, or is secreted from the tips of the leaves, as in the case of the *agapanthus* and *cala*. I have a caladium in my greenhouse, which came originally from Bahia, *nova species*—I have called it *caladium distillatum*, for, towards evening, it commences a distillatory process from the tips of the leaves, which continues all night, and the quantity of liquid supplied is quite remarkable; evaporation from the surface of the leaf must tend to equalise the temperature of the plant, and must be more rapid in the tropics, where the cooling influence is much more necessary. The singular phenomena of the *ascidia* of the Pitcher plant, afford us valuable information touching the functions of the foliage. Leaves not only transpire liquid secretions, but gaseous matter, and the more recent experiments of Mr. Hasseldine Pepsy are truly valuable; and though his experiments were chiefly, if not exclusively, confined to the vine leaf, the inference may be extended to all. It clearly appears, then, that healthy leaves incessantly discharge, whether by day or night, *oxygen*—hence they deplete the atmosphere. This had been formerly limited to their diurnal functions, and denied to their nocturnal powers; but the phenomenon of the *Somnus*, or sleep of plants, exemplified so remarkably in pinnate foliage, as in acacias and mimosas, serve to prepare us for such an announcement. To excrete oxygen at one period, and carbonic acid gas at another, was a questionable proposition, while the comparative suspension of the energy of leaves at night might warrant a reasonable scepticism. The fluttering of the aspen leaf, and the sensitive poise of many others, seem calculated to increase evaporation, &c.; but the strange and startling movements of the foliage of *desmodium gyrans*—its trembling vibrations and gyrations, may subserve other purposes not yet discovered. It is clear, that these observations regard the leaf as chiefly, if not entirely, composed of excretory organs and functions—*absorbents* are more problematical, and may be very reasonably doubted. Van Helmont's experiment with the willow tree has been long ago consigned to the "tomb of all the Capulets." The root and its functions in my next.—J. MURRAY: Hull, Jan. 4.

AGRICULTURAL CHEMISTRY.

Sir,—Many years ago I made some experiments, with a view to determine whether the carbon found as a constituent of plants was derived solely from the earth, or from the atmosphere, or from them both jointly. From the results I obtained, I was led to conclude that some plants are capable of deriving their carbon wholly from the atmosphere. I placed some seedling plants of heart's-ease, in a mixture of porcelain clay, Lynn sand, and oxide of iron, and I watered them daily during the summer, with small quantities of pure water. The plants thrived, grew to a certain extent, and also blossomed, and when dried and ignited in a close vessel, they yielded a residuum of black carbonaceous matter.

The beautiful American white rose, whose bushes are abundantly scattered amongst the sandy hollows along the sea-shore near Bidestone and Fomby lighthouses, must, I think, gain its carbon from the atmosphere, for the sand in which it thrives seems destitute of carbonaceous particles. Now, whether the plant absorbs by means of its leaves, or through its roots, the carbonic acid requisite to furnish it with carbon, seems to me difficult to determine. I see no reason to suppose that vegetables derive any of their carbon from the soil. The fallage of a thick coppice wood of twenty years' growth will yield as much carbon per acre, or per square yard, as would cover an equal area with a stratum of solid carbon $\frac{1}{2}$ inch thick, yet the same area will, at the end of another twenty years, afford as much more cord-wood, and as much more carbon, and so on, as indeed the experience of woodmen has proved for centuries, and this without any manuring with carbonaceous matter; whilst, in further proof of the non-absorption of carbon by the coppice from the soil, the older the wood is the more humus will be found in the soil, from the decay of the leaves and mosses annually taking place; and, therefore, the more will the soil abound with carbonaceous particles—hence the rich deep black soil of primeval forests.

I must, therefore, conclude that the leaves at least derive their carbon direct from the atmosphere. Probably, plants possess the power of decomposing the carbonic acid imbibed by their leaves, the carbon remaining as a constituent of the plant, and the oxygen uniting with the free hydrogen circulating upwards from the roots, to form water, which is exhaled from the leaves. I cannot agree with "J. L." who states that the extremities—i. e., roots and twigs—never change their functions. The barberry, the lilac, the common plum, and many other plants will, on inversion—that is to say, on planting them upside down—convert their roots into leaf-bearers, and their twigs into roots. Leaf-buds will burst from the roots, and roots will be put forth by the buried twigs.

To imagine for a moment that the vegetable creation derives none of its carbon from the atmosphere, is an absurdity which can in so many ways be made manifest to the dullest comprehension, that I should think no one would attempt for a moment to uphold such an impracticable conclusion. The gradual, but regular, formation of a carbonaceous soil, and the growth first of lichens and mosses, and ultimately of plants, shrubs, and trees, upon the most barren naked rocks, once destitute of even a lichen, and containing within themselves not one atom of carbon, is a sufficient refutation of the non-absorption doctrine.—R. MURRAY: Coleford, Jan. 8.

"THE POETRY OF SCIENCE"—MR. HUNT'S LECTURE.

Sir,—Scanning the details of the lecture on "The Poetry of Science," by Mr. R. Hunt, in your Journal of last week, the reader is conscious that the able curator of the Museum of Economic Geology has exceeded his intention, by making the truths of precise science a butt for the shafts of poetic caprice and fantastic unreality. The meaning of the word "POETIC," from the Greek *ποιημα*, pronounced *poy-he-ho*, signifying *I make*, consisting in the actual creation of imagery and ideas of unreal objects, it is plain, that every attempt to make science poetic must be futile, if not fatal, to that energetic study of the facts of science, which may one day enable man to comprehend the intrinsic nature of the universe, and even simulate the Creator, whose express image he is, in his actual poetic ENERGIES. "Holding up a piece of granite," representing it as "a mass as hard as adamant"—*adamant meaning diamond, if it means anything—may be very poetic, though ridiculously unreal, and unsuited to the precision of natural science.* It is something of this kind of ideology that has involved Messrs. R. Mushet, Mitchell, D. Mushet, Leighton, Ferrous, Radley, and others, in ferruginous mysticism and error. Of similar import is a communication inserted in p. 10, on the "Electric Light," the index of whose inutilty, from the substitution of mere eulogy for scientific precision of detail, may be found in the last paragraph but one, where, not being informed of which side of the point of contact the two remarkable electro-thermic phenomena occur, these singular facts are devoid of value and interest. Mr. Staitie having "seized a sunbeam" is, doubtless, very poetic, but about as pure in sentiment as the funny man's idea of a one hundred acre sun, being fashioned out of this same new-old light. As your correspondent writes so warmly on the etymology of the electric light, may we hope that he will oblige us with some details elucidative of its transmission from lamp to lamp in a street, tending to show how many electrolytic elements a battery will require to produce a luminosity equal in diffusive power to the combustion of 10 ft. of ordinary coal-gas per hour, with a disruptive interval of $\frac{1}{16}$ th of an inch between the carbonaceous pencils? Then, how much nitric and sulphuric acids to how much water for the excitants; and further, how many grains weight of zinc, or iron, &c., may, with truth, be declared equal to 10 ft. of coal-gas. Lastly, how many such batteries, so actuated, will be required to electrolyse 20 lamps in succession, with disruptive intervals of $\frac{1}{16}$ th, $\frac{1}{32}$ th, and 1 inch respectively? These details will enable us to see in how far will be true and worthy of all acceptance the expression of Mr. Staitie that, as regards economy, it is all that could be wished for; which, after the attempt, at the Western Scientific Institution, to deceive the public by the assurance that an ignited wire was the identical electric arc of the immortal DAVY, glowing with an interval of 4 inches under the united energy of 2000 pairs of electrolytes, 8 inches square, actuated by water acidulated by $\frac{1}{16}$ th its weight of sulphuric acid only, will surely seem as worthy of doubt as the untruths of Remington's auto-biography. By-the-by, and *en passant*, I should like to be informed whether the electric light possesses an actinic power at a

considerable distance as well as near, and if its ray can excite a thermometric indication at a distance, with and without a convergent reflector, and also if the electric arc, or ignited points, be not brighter in atmospheric than aqueous, spirituous, or vacuum media. The character and standing of the *Mining Journal* undoubtedly deserve these data at the hands of its read, or would be, savants, and especially when we are assured that such data exist, and that their publication would disabuse the public mind on this all-absorbing theme, exposing the naked fact, that the voltaic arc for purposes of general illumination is an *ignis fatuus*.

Apologies to Mr. Hunt's assertion, that granite once enjoyed a fluid state—i. e., igneous fluid—how is it possible, if such had been its condition, that the pebbles, the mica, the quartzose debris, and the alkaline felspar, were not fused into an homogeneous mass? Gneiss is granitic infancty.

The insertion of this letter in your next Number will, by enabling me to become a party to this magnificent discussion, greatly oblige, yours, &c., CHEVALIER GUSTAV, COUNT RADLINSKI.

College-hill, City, Jan. 15.

THE POETRY OF SCIENCE.

Sir,—The subject of the lecture of the talented author of the *Poetry of Science*, in your last Journal, is well worthy of reflection by all minds capable of proper feeling and admiring the wonders of Creation. The author appears to inherit the spirit of the great poets, who have drawn from the works of Nature their sublimest inspirations. It is, however, much to be desired that he should carefully avoid the errors which have depreciated and tarnished the works of natural theologians, when he enters into so pleasing and sublime a subject. The harmony of the heavenly bodies, and the myriads of sparkling stars in the mysterious celestial sphere, which cheer the lonely wanderer, may inspire the poet, like they did David, without entering into those frail and questionable physical assumptions invented by man. The poetry of the beauties of natural science should keep clear of all doubtful hypothesis, and be adorned only by unequivocal truths, to ensure its being appreciated and handed down to posterity. The celestial harmonies of Kepler have become discords to the men of science of the present age. I have been led very reluctantly to make these observations, in consequence of the allusion made to granite, direction of mineral veins, the perturbation of the planets, and other matters depending on questionable observations, and which are not essentially necessary to display the beauties of the universe.

Granite is an aggregation of pure crystals, like a crystalline loaf of white sugar; "rolled pebbles" are not found in real granite. A piece of conglomerate, or compact sandstone, would have been much more applicable to the description given in the lecture. Lead lodes in Cornwall and Devon are remarkable for their accordance with the magnetic meridian, and, therefore, not "at right angle," as stated in the lecture. I could add other corrections, but these will be enough to show the danger of entering into practical details in these effusions.

With regard to some of the views, confined to *terra firma*, or rather those within the province of the lecturer's own researches, I believe them much more reasonable than those commonly propounded by metaphysical philosophers. Trees have tongues, although not to speak, and mineral veins have roots and branches; and there are more powers at work in inanimate nature, silently forming and changing the very heart of the granitic mountains, than was dreamt of in our philosophy, and such are well worthy of the contemplations of expanded minds. I shall look forward with great interest for the remainder of such an interesting lecture, and I hope there will be less cause to intrude with practical remarks in future on so popular and sublime a theme.—F. G. S.: London, Jan. 7.

P.S.—Mr. De la Haye is somewhat unfortunate in his communications. In his observations on the electric light, he speaks of the difficulty of keeping the charcoal points in contact; whereas he should have said, to preserve that minute separation to give light, and to ensure the continuance and uniformity in its brilliancy. The electric light is like the conversion of our brass utensils into gold; those who can afford it may enjoy the luxury.

THE COMBINED VAPOUR-ENGINE.

Sir,—I perceive an error in your Journal as to the power resulting from the above invention, as respects the quantity of fuel consumed when compared with that consumed by the ordinary steam-engine. It is stated, that an average force of 22 lbs. per square inch is created in the combined engine, with no greater consumption of fuel than is required in the ordinary steam-engine, to generate a force of 5 lbs. only. It is evident, that when the steam-cylinder only was employed, the pressure therein was 5 + 15 = 20 lbs., and the available pressure 20 lbs. less (15 - 10 =) 5 lbs. being 15 lbs. In the perchloride cylinder the force was 21 + 15 lbs. = 36 lbs., from which take (15 - 8 =) 7 lbs., and the available pressure is 29 lbs. Instead of taking a mean of the two pressures, as there are two cylinders, each of the same length and diameter, their sum (29 + 15 =), 44 lbs. is the total available pressure; therefore, when the expenditure of fuel requisite to produce an available pressure of 15 lbs. in the usual condensing engine, the same expenditure of fuel will, in the combined engine, produce an available pressure of 44 lbs.; therefore the consumption of fuel is decreased in the ratio of 44 to 15, or as about 3 to 1, instead of as 22 to 5, which is about 4½ to 1. I think it has not yet been shown in what manner the vapour of the perchloride is condensed into a liquid, or whether it be done instantaneously; and until the combined engine be put to some work by which its effective power can be estimated, although it is ingenious and appears good in principle, its advantages will be doubtful.

7, Upper Penton-street, Jan. 5.

JOHN CURR.

[We readily insert Mr. Curr's communication, the subject being a most interesting one, and well worthy of investigation and discussion. Our data was obtained from experiments carefully conducted, and, without pinning our faith too strongly on our own observations, or figures, we cannot but think our results are nearer the truth than those of our correspondent.]

STEAM-CARRIAGES ON COMMON ROADS.

Sir,—I had intended, before so much time had elapsed, to have sent you a communication on the subject of Mr. Clarke's report on Sir James Anderson's steam locomotive for common roads; but a press of business has prevented me. It is, however, never too late to correct error, or expose piracy; and whether Mr. Clarke's statements of Sir James's claims be one or the other, I am truly astonished that any engineer, more particularly one who, as a patentee, is prominently before the public, could stake his professional reputation by placing his name to such a document, and that a gentleman, after "30 years' study and indomitable perseverance, at an outlay of more than 60,000£," should not have known what was taking place in the scientific world, with respect to the very machine he was endeavouring to construct successfully, and not attempt to claim as his invention what is notoriously that of another. Mr. Clarke, in his report, takes a very high stand—thinking, perhaps, there was no one left who knew anything of the progress made 25 years since on this interesting subject; and, after attributing the inventions of former practitioners to Sir J. Anderson, he, as much as tells us that they were all fools, and knew nothing of the matter—that is, they are to be robbed of their ideas first, and kicked afterwards. I, as having in by-gone times had something to do with the subject under notice, will endeavour to undeceive Mr. Clarke and his protégé, Sir James, whom he so kindly takes under his special protection, as well as Mr. Motley, who, from his communications in your Journal, appears so enamoured with the favourable nature of the report. I will take but a brief notice of the several points; and if Mr. Clarke is not aware of the short facts I shall state, or has the temerity to contradict them, I will give you, in an after communication, which I shall be at more leisure to draw up, facts, dates, and proofs for what I assert, although much of the report is less objectionable for piracy, than for the silly remarks attributing to Sir James Anderson, what has been done by everybody connected with all descriptions of steam-engines for many years past. His claim appears to be—1. Condensing the steam; this was done in a road-carriage engine I was connected with 25 years ago, to the utmost extent practicable, and quite successful.—2. Working the steam expansively—done in the same carriage.—3. Preventing loss from radiation by clothing cylinders, &c.—done not only in the same carriage, but everywhere the practice has been getting into use for the last 30 years.—4. Suspending the carriages on springs—this is absolutely necessary, as was soon discovered in the earliest attempts at steam locomotion, and always acted upon afterwards, or the machinery would soon have been rendered useless.—5. Elastic wheels—tried over and over again, under the best circumstances, and failed, as any tyro of an engineer ought to know they would fail; for if the elastic spokes act, the wheel becomes a misshapen ellipse instead of a circle, and the carriage is always going up hill when on level ground.—6 and 7. As we are not informed by what mode the engines are to be worked at their maximum speed, or for reducing and increasing the speed of the carriage, according to the resistance, or how the

driving-band is to be made so perfect, and lateral friction in driving-wheels prevented, I cannot, of course, answer these points. They have, however, more or less, engaged the particular attention of most of those scientific men who have been engaged on the subject, particularly the best means of commanding the speed according to the resistance.—8. The use of common coal—with all his smoke-consuming apparatus, coal can never be advantageously employed.—9. Reducing expense, by doing away with water stations—answered in point 1. I now come to Mr. Clarke's letter in the next Number of the Journal, in which he claims for Sir James the steering apparatus with the divided axle, each piece turning separately on a pin near the nave of the wheel. It is astonishing how clever some men are in discovering "mare's nests." Why, Sir, the principle of this fore carriage has been patented four or five times, within the last 25 years, under varying circumstances. I myself knew a carriage constructed on this very principle, as regards the divided fore carriage, 14 years since, and a celebrated coachmaker also adopted a modification of the plan under a patent for horse carriages.

So much for this report, which is certainly anything but creditable to the experience of its author, whom I now inform that I can lay my hand on an old common road locomotive in London, with all the essentials he lays so much stress upon, which with a week's repair, if I had the time to attend to it, I would back in performance against Sir James Anderson's "spick and span" new one, which, so far from possessing a single novel feature, is made up of the various appliances of Macerone, Gurney, Hancock, Squires, Ogle, and a host of other speculators on common-road locomotion; and if it ever succeeds to anything like what Sir James and Mr. Clarke claim for it, I can only say I shall surprisingly rejoice at Sir James's success. It is palpably evident, from the trashy character and style of phraseology used in drawing up the report in question, that its author is quite out of his element in such an employment, and, moreover, that he must be sadly ignorant of the progress made, upwards of a quarter of a century since, in the common-road locomotive; and it is this evident want of acquaintance with the subject which surprises me how he could venture to put his name to such a public document? However, he who plays at bowls must expect rubbers, and I caution him to be more circumspect in future. Much merit may be due to Sir James Anderson for his unwearied perseverance; but if he has been devoting his whole attention to the subject for 30 years, and got no further than his contemporaries did 20 years since, his time and capital have been sadly misemployed, without in the most remote degree benefitting the public. The present position of railway property, and the foreshadowing of aggrandisement and monopoly, which appears in all the proceedings of the directorates, render the present period singularly appropriate for the introduction of common-road locomotion; and one-sixth of the capital stated to have been thus wasted by Sir James Anderson would now, under judicious arrangement, render the proposed company highly successful. As you know my name and address, allow me to subscribe myself—A ROAD-LOCOMOTIVE ENGINEER. Rotherhithe, Jan. 10.

CLARKE AND VARLEY'S ELASTIC TUBE ATMOSPHERIC RAILWAY.

Sir,—In consequence of the abandonment of the atmospheric system on the South Devon Railway, it is very probable that persons who have not had an opportunity of knowing the true state of the matter, may attribute its failure to the system, and not to the details, of the plan of Messrs. Clegg and Samuda, not being aware of the great improvements which have been effected in this safe, economical, and rapid mode of propulsion. It will be seen, by the reports of the different committees interested in that railway, that the cause of its being given up has been—1. The great expense of the apparatus in first cost, it being too great to induce them to continue it on to Plymouth.—2. The great wear and tear and cost of maintenance.—3. The great loss of power from leakage, and the uncertainty of its action. The most material objection against it was the leakage. This, it will be seen, arises from the longitudinal valve and sealing composition, and from the mode of joining the tubes endways by socket joints from the piston, the tube not being a perfect cylinder, the entrance and exit valves, and from the joints in the connecting pipes.

The construction of the longitudinal valve is well known; it is composed of leather, stiffened by plates of iron—the leather shutting down upon a seat of iron. The leather being exposed to all the changes of the atmosphere (in summer it is baked in the sun, in winter, frozen by the cold), it soon becomes deteriorated, and, by its constant opening and shutting, at a high speed, it soon becomes full of cracks between the plates of metal, which renders it unfit to support the vacuum, unless at an expense of power, which no amount of traffic could warrant. Also, the valve is of so yielding a nature, that its own weight is not sufficient to keep it in anything like complete contact with the metal seating, and even when exposed to the full pressure caused by the vacuum, this contact is far from being perfect; therefore, the deficiency must be made good by a sealing composition. This composition is necessary of a soft and yielding nature, and wherever a slight cavity occurs under the valve, and this, from its rigid nature, happens at very frequent intervals, the pressure of the external air has the effect of gradually forcing a passage through the composition, and so producing a leak. It is the custom to employ a number of men—one or two to every mile in length of tube—to stop these leaks as they occur, by plastering up the grease, or sealing composition. But to do this effectually would require nearly the constant attendance of a man at every little aperture, as the nature of the composition is such, that it is constantly being worn away, and it takes place under the most favourable circumstances. In seasons of much wet all contact between grease and leather is destroyed; and if frost occur, the valve becomes more or less embedded in ice—the valve trough forming a receptacle for the lodgement of water. The tubes are cast in lengths of 9 or 12 ft.; the ends are inserted in deep sockets, cast on one end of each tube. These are filled with spun-yarn and a composition of beeswax and tallow. By the expansion and contraction of the metal, from change of action, and from the joints are constantly being worn away; in addition to this, the expansion in the joints expands in summer, when it is forced out of the joint, and in winter contracts when a vacancy is left between the composition and the metal; thus, from the moment the tubes are laid down, the joints begin to be leaky. Another cause of leakage is from the pistons passing through the tube; the tube is laid down on the line as it is taken from the mould, with the exception of the sand being cleared from it, and a coating of tallow on the inside, to render it smooth. All the irregularities of the casting remain, which amount to as much as a $\frac{1}{16}$ inch in some parts. The piston, in passing these inequalities, has not time to expand to fill up the vacancies, and a great amount of leakage takes place.

The entrance and exit valves are a heavy and cumbersome apparatus, and lined with leather, which soon becomes deteriorated.

The connecting pipes from the air-pumps to the traction tube are made with deep socket joints, and are subject to the same leakage as the joints in the traction tube.

The travelling piston, with its attachment, is a very weighty and complex piece of machinery, and involves a large amount of friction in its action.

The merits of our tube will be found to consist in its contrast, in respect of all these imperfections, with Clegg and Samuda's. The tube is itself a valve; it is constructed of plates of wrought-iron from $\frac{1}{4}$ to $\frac{1}{2}$ inch in thickness, and in lengths of 9 or 12 feet. These are formed into tubes in the usual way, by means of rollers, and the meeting edges planed so as to come into accurate contact with each other. The tubes are fastened together at the ends by bands of corrugated copper, or other suitable metal, securely fastened to the ends of the tubes, and the joints made merely to abut one against the other, leaving sufficient space to allow for the expansion and contraction of the metal, and the elasticity of the band is sufficient to allow this action to take place without at all impairing the air-tightness of the joint. The tube is supported, at intervals of about 6 ft., by chairs of wrought-iron, securely fastened to the sleepers, supporting the tube in such a manner that its weight, in addition to its elasticity, always tends to keep the edges of the longitudinal opening in contact. The coupler, or connecting plate from the piston inside with the train, is a plate of steel, about $\frac{1}{2}$ inch in thickness. The opening of the tube for the piston is effected by two pairs of rollers, fixed to the coupler-frames, and two rollers, one on each side of the plate, acting horizontally against the inside of the tube; these rollers are of such diameter that, when they are inside the tube, they force it open and admit the connecting plate to pass along without friction, as the opening thus effected is greater than the thickness of the plate; and the elasticity, or spring, of the tube has a tendency to bring its edges together behind, and counteracts the force required to open it in front, thus almost neutralising the effects of friction in producing the transit.

The interior of the tube forms a perfect cylinder, more perfect than a bored one of cast-iron. The entrance and exit valves are made of plates of metal, sliding laterally across the half on each side. The surfaces are all planed and made air-tight by grinding, so that no perishable material is used in their construction. They are simple, strong and durable, and sure in their action.

The connecting-pipes, from the air-pumps to the main, are joined together by metal elastic joints, by which means any length of close pipe may be employed, without a possibility of leakage. It will be thus seen, that the entire apparatus is made of metal—no perishable material is used in any part. Ample provision is made for expansion and contraction from change of temperature. In the longitudinal opening the points of contact are metal surfaces, planed to a true and even line. It is at all times kept closely shut by its own elasticity, and, when exhausted, the metallic edges are held together by the pressure upon the whole surface by the external atmosphere. No cavities can occur, the joints being perfectly mated, and the only precaution adopted is to keep the joint slightly mated with boiled oil. The labour of one man, for a few hours in each week, would effect this, over a great number of miles.

This plan has been tested for upwards of two years, on an experimental line of 300 ft. in length, and with a tube of 15 inches in diameter, laid down at the Poplar station of the London and Blackwall Railway. It was daily working for exhibition, exposed to all the shocks and vibrations of a heavy carriage passing over it, at a speed of 30 miles per hour. The elasticity of the metal is not in the least impaired, and the condition of the joint is rather improved, and the longitudinal opening is, for all practical purposes, perfectly air-tight. During that time, it was seen and examined by hundreds of scientific men and engineers, all of whom expressed their entire approbation of the arrangements. The relative cost of the two systems will be seen, as by Mr. Gill's estimate, the lowest amount which Mr. Samuda's tube can be laid down for is 9826£ per mile; by our system it may be laid down for less than 3000£ per mile. The cost of maintenance of the former by the renewal of valve, packing of the joints, composition, metal to attend on the valve, &c., is enormous. In our tube the only expense is one man to attend every four miles, to see that the tube is kept well painted, and the opening slightly oiled; this is the only expense of maintenance, and we have no reason to doubt but that the tube will last for an unlimited number of years, as oxidation of the metal is the only cause that can ever injure it, and it being all above ground, it is easily kept from oxidation by paint. The first cost of stationary power will also be reduced 50 per cent., as we have no leakage to provide against. In some situations water-power may be available, if it be found anywhere near the line of railway, the power may be conveyed by our close connecting pipes without any loss. On an unprejudiced examination of our system, it will be found to combine all the elements of perfection for railway propulsion. In constructing a railway, in most cases, nearly the surface line of country

might be followed. Bad gradients are no obstacle. The reduced cost of construction thus attained, added to the diminished outlay on permanent way, and this, combined with the great saving that would be effected in maintenance, owing to the reduction of wear and tear by the comparatively light weight that would pass over the line, would effect a saving in the outlay on railways beyond all calculation, and enable millions, now buried and wasted in the formation and preservation of costly works, to be employed in a vast extension of this important system of internal communication.

In first forming a railway, the expenses of the tube is more than saved by the above reduced cost of construction. The first cost of stationary power will be for less than for a plant of locomotive engines. In working expenses, there will be 50 per cent. saved in power required to work the train, in consequence of the absence of the useless dead weight of the locomotive engine, in addition to which the power is generated in the stationary engine under the most economical conditions which can be obtained by the steam-engine. Steep inclines on locomotive railways may be worked with the same facility as on a level by our tube, without any stationary engine being required. A piston, attached to the ascending train, would be drawn through the tube by the power of the locomotive and gravity of the train—thus forming a perfect vacuum in the tube, which vacuum, by the aid of the locomotive, would draw the ascending train up the incline without any diminution of velocity—so that in future locomotive railways may be formed without those deep and expensive cuttings and high embankments which have hitherto been formed. The tube may also be laid down by the side of a turnpike-road, part of the road being raised off to protect it from anything getting on the line. I should propose to lay down two tubes, one for each direction, as proposed by Mr. Thomas Motter.

The cost of such tracks firmly embedded in the road, with iron rails nailed on, would not exceed 12000. per mile, they would be found very durable, and the cheapest road ever made for heavy weights.

The degree of confidence which the proprietors of our patent have in the system, will be seen by this extract from Mr. Gill's statement to the meeting of shareholders of the South Devon Railway, at Exeter, Jan. 6, 1849, in which he states—"A proposal made by Messrs. Clarke and Varley, who offered to expend 10,000. in laying down their tubes (without any valves) on the borders of Dartmoor, and would then be able to send 300 tons of his clay by railway per day, because the company would then be able to do it at a price which would make it remunerative to him.

But this proposition did not meet with the attention it deserves, and which, in a short time, the shareholders will wish it had; as we shall be able to prove to the railway world that we can run trains equal in weight to the locomotives for one-half, and in some cases for one-third the expense of the locomotive system.

Unfortunately, it is frequently the fate of useful inventions that considerable time elapses before the public are fully sensible of their value; but they cannot be stifled, or kept back long—some thinking men arise who throw all prejudice aside, and either recommend or adopt them. So it has been with our railway—we laid down an experimental line of tube, and had it at work for above two years. We begged and entreated the engineers, who were interested in carrying out the atmospheric system on other lines, to come and examine our tube, and judge for themselves. But under no consideration could we get them to do so, and they were determined to look at it. But they were determined to examine it, and I am quite willing that you should employ my name as evidence of this."

Manufactured and sold by the Patentees, BICKFORD, SMITH, and DAVEY, Cambridge, Cornwall.

THE PATENT SAFETY FUSE

FOR BLASTING ROCKS IN MINES, QUARRIES, AND FOR SUBMARINE OPERATIONS.—This article affords the SAFEST, CHEAPEST, and most EXPEDIENT MODE of effecting this very hazardous operation. From many testimonies to its usefulness with which the manufacturers have been favoured from every part of the kingdom, they select the following letter, recently received from John Taylor, Esq., F.R.S. &c.—"I am very glad to hear that my recommendations have been of any service to you; they have given me the greatest satisfaction, and I am quite willing that you should employ my name as evidence of this."

Manufactured and sold by the Patentees, BICKFORD, SMITH, and DAVEY, Cambridge, Cornwall.

Under the sanction and patronage of His Royal Highness PRINCE ALBERT, Lord Warden of the Stannaries, Chief Steward of the Duchy of Cornwall and Devon, &c.

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COLONIAL BANK.—The court of directors of the Colonial Bank hereby give Notice, that the DIVIDEND declared at the Half-yearly General Meeting, held this day, will be PAYABLE at their house, No. 15, Bishopsgate-street, within, on and after the 22d inst., between the hours of Eleven and Three.

By order of the court of directors, C. A. CALVERT, Secretary.

15, Bishopsgate-street-within, Jan. 9, 1849.

SUNDERLAND DOCK COMPANY.—LOANS ON DEBENTURES.—The directors of the SUNDERLAND DOCK COMPANY are prepared to RECEIVE TENDERS OF LOANS, in sums of £500 and upwards, for periods of three years; and in sums of smaller amount for periods of five years—to be secured on the company's debentures, bearing interest at the rate of £5 per centum per annum, payable half-yearly.

Application to be made to the secretary, at the Dock Office, 19, Sunnyside, Sunderland, Jan. 10, 1849.

By order, MICHAEL COXON, Secretary.

EXHIBITION OF TELEGRAPHS.—THE GENERAL TELEGRAPH COMPANY INVITE ALL PERSONS INTERESTED in this highly important subject, to INSPECT the splendid SERIES OF TELEGRAPHS NOW ON VIEW, at the SOCIETY OF ARTS, ADELPHI.—Tickets for which may be obtained at the company's offices, 9, John-street, Adelphi, or of any Member of the Society.

CUNNINGHAM AND CARTER'S NEW SYSTEM OF RAILWAY PROPULSION, MAY BE SEEN IN ACTION DAILY, at Messrs. Ingram's, 29, CITY-ROAD, from Twelve to Four o'clock.

CUNNINGHAM AND CARTER'S NEW SYSTEM OF RAILWAY PROPULSION.

TO RAILWAY PROPRIETORS, ENGINEERS, and all other PARTIES CONNECTED WITH RAILWAYS.—J. T. CARTER will undertake to ALTER any LINE OF RAILWAY, without impeding the present traffic; and BRANCH LINES may be CONSTRUCTED ON THIS PRINCIPLE AT ONE-HALF THE COST ON the locomotive system; while he will guarantee the working expenses at less than one-fourth.

Parties interested are requested to inspect the model, which may be seen daily, from Twelve to Three, at Ingram's, 29, City-road, where further particulars may be obtained.

RIDER'S RAILWAY BRIDGE.—TO RAILWAY COMPANIES.—This BRIDGE has been now for 18 months in DAILY USE (having a double track) on the HARLEM RAILWAY, in the State of New York, United States. The Erie Railway and the Newhaveron Railway Companies have likewise adopted it. Several other bridges, for ordinary purposes, are also being constructed.

The advantages of this over all other iron bridges hitherto invented, consist in the small amount of iron required, compared with the strength obtained, in avoiding the use of any surplus weight of material, in the consequent economy of its construction, and also from its lightness, easy mode of putting together, and facility of transport, in its peculiar adaptation for foreign use.

As regards economy, it can be erected at a cost not exceeding that of a WOODEN BRIDGE, of equal capacity.

Applications to be made to Mr. Moulton, the patentee, Bradford, Wilts.

LOCOMOTIVE STEAM-CARRIAGE COMPANY, FOR PASSENGERS AND PARCELS ON TURNPIKE ROADS.

PRELIMINARY MEASURES having been TAKEN FOR CARRYING OUT the above object, all communications are requested to be addressed to Mr. Henry English, Hon. Sec., at the office of the Mining Journal, Railway and Commercial Gazette, 26, Fleet-street; or to Mr. F. Herbert, solicitor, 8, Heathcote-street, Mecklenburgh-square.

KENT AND SUSSEX INDURATED AND IMPERVIOUS STONE COMPANY.

Capital—£20,000, in 2000 shares, of £10 each. (Provisionally Registered.)

N.B.—ORDERS EXECUTED FOR PAVING, &c.

Apply for prospectuses, &c., to Mr. William Hutchinson, Calverley Quarry, Tunbridge Wells; or to Messrs. Hutchinson, Wilford, and Co., East Temple Chambers, 2, Whitefriars-street, Fleet-street, London.

TO PUBLIC COMPANIES, MERCHANTS, MINERS, &c.

—EVERY DESCRIPTION OF ACCOUNT BOOKS requisite for the COUNTING-HOUSE or BOARD-ROOM, manufactured to any pattern and ruling, hot-pressed, and bound in the most durable manner (paged in type, without additional cost), on a scale of charges reduced to meet the times.—WRITING PAPERS, ENVELOPES, and STATIONERY, of the very best description, on the like reduced scale. Lists on application.

F. F. RALPH, COMPTON STATIONER, 36, THOUGHTMORTON-STREET, BANK, LONDON.

TO CONSUMERS OF GAS.—THE PATENT GAS-LIGHT MONITOR.—ADAPTED TO EVERY DESCRIPTION OF BURNER, and SUPPLIED at a COST placing it within the REACH OF EVERY CONSUMER—regulates the flame of gas-lights to any required height—economizing the consumption, and preventing the danger and inconvenience arising from the flaring of lights.

PATENTEE'S OFFICE, 30, KING-WILLIAM-STREET, CHANCERY-CROSS.

NATIONAL GAS BURNER.—After 18 months' trial, accompanied, in many instances, by severe tests, the result of which has elicited unqualified approbation, the NATIONAL ECONOMIC GAS BURNER stands pre-eminent.

Testimonial from Samuel Clegg, Esq., Consulting Gas Engineer.

I hereby certify, that I have examined the National Economic Gas Burners of Messrs. Paul and Co., London, and find the consumption per hour of cubic feet of gas, at a pressure of 5-10th of an inch to be respectively—No. 0, 4 feet; No. 1, 6 feet; and No. 2, 10 ft.; at the same time the illuminating power is very great; the light remarkably steady, with freedom from smoke or smell of gas, with great purity of light; and, in my opinion, they are decidedly the best patent gas burners in use.

London, Nov. 9, 1848.

May be seen burning, and can be tested by an experimental meter, at the office of PAUL & CO., Gas Engineers and General Gas Fitters, No. 43, Skinner-street, Snow-hill, London.—A detailed Description and Diagram, with testimonials at length, forwarded, post-free, on application.

PATENT ALKALI COMPANY'S IRON PAINT.—This PAINT IS THE PRODUCT OF A PATENT PROCESS, and possesses PECULIAR and VALUABLE PROPERTIES, not otherwise attainable.

Its colour (as at present produced) is a rich purple-brown. It is perfectly free from the deleterious qualities of white lead.

It surpasses all other paints ever yet discovered, in point of durability and economy. Two coats of this paint are more than equal to three of any other description.

From its chemical composition, it is pre-eminently adapted for covering iron; also wood, and stucco, or brick buildings. The process by which the base of this paint is produced, makes it impossible that any change should take place in its composition from atmospheric influence. Its identity with iron secures it from galvanic action, so fatal to the durability of lead and other paints on iron work.

It has been exposed on shipping to the action of sea-water, and of the sulphuretted hydrogen, so prevalent in sea-ports and tidal harbours, for more than three years, without change.—Its cheapness and strength render it peculiarly suitable for iron bridges, roofs, and railings, farm buildings, and shipping. It will also cover crooked timber.

Price, by the ton, £25, delivered in London, exclusive of packages.

Agents will be appointed for the principal towns in the United Kingdom; in the mean time, orders may be addressed to the offices of the company, No. 20, Finchchurch-street, London.

JOHN A. WEST, Secretary.

NEUBER'S IMPROVED LIQUID GLUE IS IMPERVIOUS TO DAMP OR HEAT, without smell, and equal, if not superior, in strength to any other adhesive, and is equally applicable to iron, wood, and stucco, marble, ivory, glass, china, and earthenware, plaster models, for every description of fancy work, and for household purposes. It may be used at a moment's notice, and requires no preparation.—Price, dark, 8s.; pale, 10s. per gallon; and in bottles of 6d., 1s., and 1s. 6d.

NEUBER'S IMPROVED WATER VARNISH is without smell, perfectly washable, produces an elegant and durable polish, and requires no preparation of size.—Price, full body, 10s.; flat, 8s. per gallon; and in bottles of 6d., 1s., and 1s. 6d.

Sold, wholesale and retail, by Messrs. NEUBER & WATSON, Varnish and Japan Manufacturers, 4, Endell-street, Broad-street, Holborn, where samples may be obtained, or forwarded free on receipt of 12 postage stamps.—Retail warehouse, 75, Long-acre, two doors from Drury-lane.

N.B. Respectable local agents are required for the sale of these articles in the provinces.

CAUTION.—"One of the most useful articles that can be possessed is Robinson's Patent Liquid Glue."—Times. From the acknowledged excellence of ROBINSON'S PATENT LIQUID GLUE, which may now be had in nearly every important town in the Kingdom, has arisen numerous spurious imitations. Be particular to ask for Robinson's Patent Liquid Glue—none else is genuine. Neither time nor climate, hot nor cold fluids, affect it.—It unites permanently severed glass, china, wood, cast-iron, stone, or marble.—"Douglas Jerrold's Weekly Newspaper." "An extremely valuable addition to the store of domestic requisites."—Atlas.

In bottles, price 1s.—Depot, No. 75, High Holborn, opposite the George and Blue Boar, London; may also be had of Wm. Hobbell, 2, Astley-row, Lower-road, Islington.

PLANTAGENET GUARD RAZORS, Manufactured under the authority of LETTERS PATENT GRANTED BY HER MAJESTY THE QUEEN, and under the special Patronage of the Nobility and Gentry, the Army and Navy, the Clergy, the Bar, and the Faculty.

The Razor is made of the finest tempered steel, imparting a matchless smoothness and keenness to the edge, and the addition of the Guard causes the Razor to glide with safety over the face, removing the beard without the possibility of cutting the skin.

Guard Razors are fitted for right-hand and for left-hand shaving exclusively. Best black handles, per pair, 12s.; single, 6s. Best ivory handles, 16s. per pair; single, 8s.—Sent post-free for 8d. each extra.

A pair of the best Razors, elegantly finished, in a superior Russia box, is a valuable present for a nervous, paralysed, or short-sighted friend—price One Guinea; sent free for 1s. 6d. extra. It is used by the Emperor of Russia, and will be exchanged if found imperfect. A single Razor, of the same quality and finish, in a neat roan case, sent free for 10s.

C. STEWART & CO., Patentees, 140, Strand (first floor), opposite Catherine-street, London.—CAUTION.—Every Guard is stamped with the signature of "C. Stewart and Co.," to intimate which is forgery.—A full description of the invention, with testimonials from practical application, sent post-free.

"We have used the Plantagenet Razor, and found shaving to be performed with the greatest freedom and ease, and with perfect safety."—Mining Journal.

"Among the most valuable discoveries of modern times."—Morning Post.

"To all men a source of comfort."—Morning Herald.

"The blind, the nervous, and the invalid can get through the operation of shaving with perfect security."—Sunday Times.

"It is literally a fact, that this razor can be used by the operator with perfect security in almost any situation. It can be used in bed, on a railway, or even in a carriage on the common roads. This guarded razor is really a splendid invention."—Lancet.

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